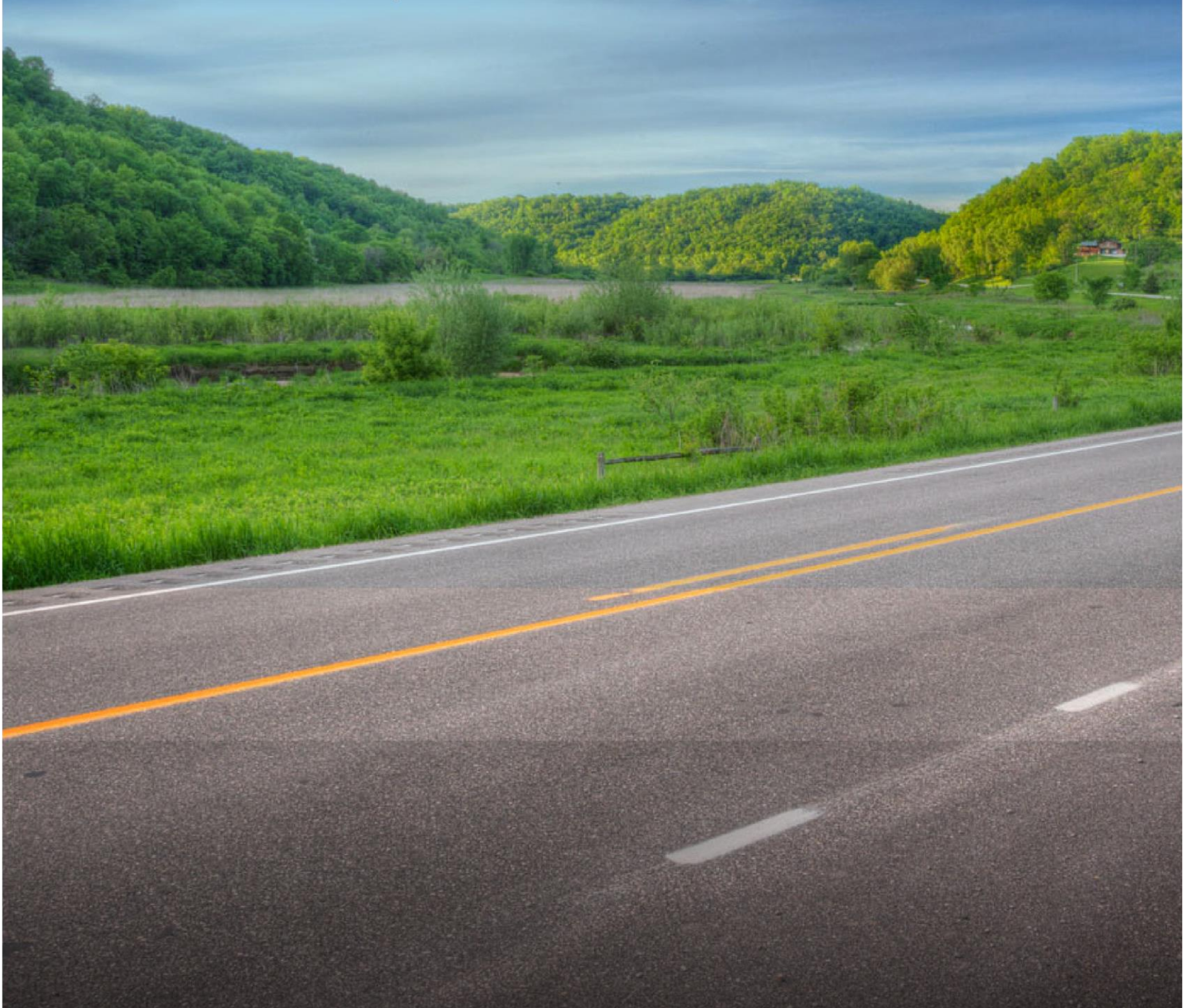
IOWA DOT

IOWA IN MOTION 2045

STATE TRANSPORTATION PLAN

ICE | IOWA INFRASTRUCTURE CONDITION EVALUATION



2017-2018 HIGHWAY PLANNING REPORT

Iowa Infrastructure Condition Evaluation

Highway Planning Report

2017-2018

Table of contents

List of figures and tables

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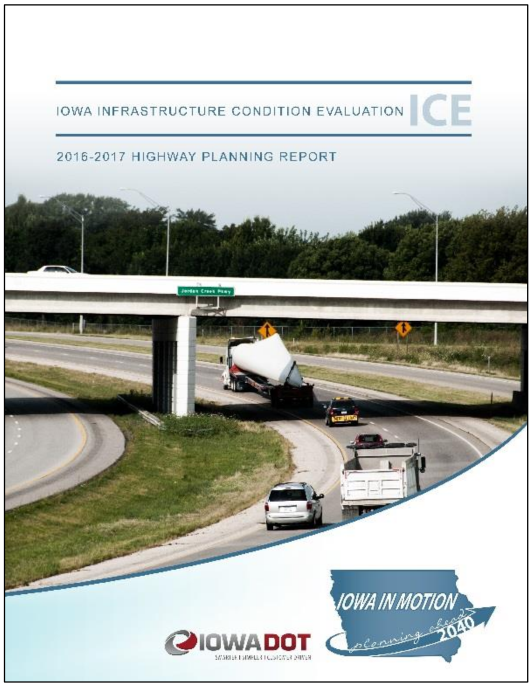
1. Introduction



2015 ICE Report

To aid in the evaluation of the Primary Highway System, the Iowa DOT has developed a tool that measures the current condition of roadway segments using a single composite rating calculated from seven different criteria. The Infrastructure Condition Evaluation (ICE) tool is based on the result of merging seven individual criteria using a linear overlay process that includes Iowa DOT's in-house Roadway Asset Management System (RAMS) – previously known as the Geographic Information Management System (GIMS) – and Pavement Management Information Systems (PMIS). Development of the ICE tool relies heavily on the use of a Linear Referencing System (LRS), which is a spatial referencing component that utilizes reference posts to calculate the segmentation found in ICE. This process is now conducted using the Segment Analyzer tool, which is a software package developed by Transcend Spatial Solutions, customized to fit the needs of the Iowa DOT.

Through the linear overlay process, a single table is created and stored in Oracle Spatial, the Iowa DOT's data warehouse, which allows for easy querying and use of LRS for visualization in Geographic Information Systems (GIS). This table is then further analyzed and processed using Structured Query Language (SQL) to achieve data normalization, weighting, and composite rating as determined by input from internal stakeholders. The results from the ICE tool are presented in this planning report, ArcGIS Online, and through a new straight-line diagram tool known as Road Analyzer.

1.1 Purpose and need for an annual report

Beginning with the first discussions related to the development of the ICE tool, the dominant theme present in conversations with key department stakeholders was, "Where do we need to be looking to next, and when?" There was a strong desire to use this tool to help populate an initial pool of candidate segments that would progress toward further study. It was this theme that framed the need for the original interstate analysis and ultimately guided the expansion to the Primary Highway system with a newly defined Infrastructure Condition Evaluation tool.

Beginning with its initial development, the purpose of the ICE tool was to provide the Iowa DOT with an initial screening and prioritization of corridors/segments. This process now evaluates Iowa's Primary Highway system, independent of current financial constraints, using a select group of criteria weighted in terms of their relative significance. The resulting segments would then represent those areas that may be considered for further study, with the possibility of being considered for programming by the Iowa Transportation Commission. While this initial screening will aid the Iowa DOT in identifying those areas to be considered for further study, the report will not identify specific projects or alternatives that could be *directly* inputted into the programming process.

In 2016, the ICE tool was enhanced to include a more granular set of corridors while addressing an identical set of goals and objectives. This resulted in the definition of 467 corridors (previously 283), ranging from 1 to 479, meant to provide a better snapshot of current conditions across the primary highway system. Defined by logical breaks in the system, the updated corridors provide specific termini that should see limited change from year to year.

With the production of each annual report, Office of Systems Planning attempts to provide objective data analysis using internal data sources to track and manage corridor and segment level data. By maintaining consistency on an annual basis, the ICE tool has the ability to provide yearly trend data within each report. As stakeholder needs continue to evolve, the ICE tool provides flexibility and the proper means for studying the changes on Iowa's primary road network.

1.2 Current and future uses

The ICE data included in this report provides corridor level analysis and serves as a valuable input to several different processes within the Iowa DOT. The report and tool provide a simple breakdown of data to confirm and enhance some of the programming analysis that has already been conducted. Other current and future uses of the ICE tool include the following.

VCAP

The Value, Condition, and Performance (VCAP) matrix is a highway analysis tool developed to leverage the multiple tools available at Iowa DOT to help identify and prioritize candidates for highway freight improvements on the Primary Highway System. The analysis uses INRIX-identified bottlenecks and results of the freight mobility issue survey performed by the Iowa DOT to populate a list of candidate locations. These projects are ranked based on the bottleneck occurrences and/or prioritization and represent the performance portion of the VCAP tool. Then, projects are evaluated using the Iowa Travel Analysis Model (iTRAM) to measure the vehicle hours traveled (VHT) costreduction benefit. This component serves as the value portion of the VCAP analysis. Lastly, ICE was used to evaluate the current conditions at each candidate location by selecting and analyzing the segmentation from the initial list of INRIX bottleneck locations.

After each candidate location was assigned a Value, Condition, and Performance rating, each were ranked using values from the three categories. The average of these three rankings was calculated and the candidate locations were assigned an overall priority rank. If two locations had the same average ranking, total truck traffic at the location was used as a tiebreaker. The final list of candidates in the VCAP matrix served as a critical piece for prioritizing candidate locations for highway freight improvements in the Iowa State Freight Plan.

Transportation Systems Management and Operations

The Office of Traffic Operations has developed a Transportation Systems Management and Operations (TSMO) plan which utilizes and expands upon the ICE methodology for data analysis. Originating from the ICE tool structure, the ICE-OPS concept utilizes a similar normalization and weighting structure and composite scoring approach to compare Interstate corridors defined by the ICE tool. The tool is meant to provide a detailed analysis for each interstate corridor using nine different criteria, which include:

- All bottleneck occurrences per mile
- Freight bottleneck occurrences per mile
- Incident frequency per mile
- Crash rate
- Buffer Time Index (BTI)
- Weather sensitive corridor mileage
- Event center buffer mileage
- Average Annual Daily Traffic (AADT)
- ICE composite rating

A final composite rating is then used to provide a relative ranking for each corridor. Like the ICE tool, raw data from each criterion is supported in an Excel table and summarized in a final output table using SQL.

In future iterations, the ICE-OPS tool was expanded from 21 interstate corridors to 54, while also adding 85 non-interstate corridors. This offered a more refined approach for evaluating current interstate conditions across the state.

Corridor studies

Although the ICE corridors were defined by natural breaks in the primary highway network, corridor termini can be adjusted to meet any user specific needs. Shortening or lengthening the corridors is a simple process that can be conducted with GIS software. The segments and corridor analysis can be shown spatially in addition to the data provided in an Excel spreadsheet. As a result, the ICE tool can provide comparative benefits for corridor study efforts.

Statewide Long Range Transportation Plan

In the most recent update of the Iowa DOT's Statewide Long Range Transportation Plan, the corridors defined by the ICE process provided the structure for evaluating Iowa's Primary Highway system. The expanded corridor list offers a corridor-level approach towards identifying potential improvement needs in the plan. As part of the corridor structure, the lowest 25 percent of corridors by ICE rating, were identified and serve as one criterion in the needs identification process.

Road Analyzer

With the DOT's new asset management system, RAMS, one of the tools used to analyze data is called Road Analyzer, which provides the ability to visualize data using an interactive straight-line diagram. The tool is accessed online and provides the user flexibility to display which data is most relevant to them.

This tool provides an opportunity for ICE users to better interact with the dataset giving more control for personalized viewing. Some of the other features include Google street view, dashboarding, data exports, report, and customizable display preferences. All of the features included within Road Analyzer make it a more user-friendly method of consuming ICE data.

1.3 Data access

ICE Web map portal

The primary location of the ICE data outside of this document can be found on the Iowa DOT Web map powered by ArcGIS online (ICE Web map link). Within this Web map, users can explore the ICE data across the entire system and display those results visually. By clicking on the line features within the Web map, the GIS platform displays a popup box that contains the route, county, length, and the normalization values of each of the seven criteria among others. Each of the data layers contains a description of the data and can be toggled on and off to display the ICE ratings by individual criteria.

The Web map is intended to serve as a quick, visual reference for the public and internal users. For those seeking a simple answer to their condition questions across the state, the Web map would be the recommended medium.

Data availability

Through the use of SQL and ArcGIS, the data was grouped and organized in a series of Excel spreadsheets. These spreadsheets contain roughly 27,000 ICE segments across the state and make up the 467 corridors defined later in the report. Other raw data fields available for each record can be found in Table 1.1.

Table 1.1: Data included in ICE results

Area type including urban, suburban, incorporated city, and rural	National Highway System (NHS) segments
Level of service	Number of lanes
Length in centerline miles	Number of structures
County name and number	Planning class
Directional ICE composite rating	Route name and number
Divided highway classification	Segment lane capacity
Federal functional class	Seven criterion normalization values
Maintenance district	Urban area and name
Volume and capacity numbers	V/C ratio

Data requests

To access any of the ICE data, the Iowa DOT's Office of Systems Planning has created a series of Excel spreadsheets to house all of the data used in the analysis, inclusive of segment and corridor graphs and calculations. Since this data has already been processed, the office has the flexibility to make easy adjustments to the datasheets to fulfill requests in a timely manner.

Another example is distribution through ArcGIS. For more advanced analysis, ArcGIS allows the user to have spatial access to all of the attribute fields within the ICE dataset. A static shapefile can be provided to users who are interested in performing their own analysis. A few examples of the questions advanced queries can answer are[1]:

- Select all segments with ICE ratings less than 60
- Select all segments with ICE ratings less than 60 and located in Story County
- Select all segments on I-80 with ICE ratings less than 60
- Select all segments with structure BCI values less than 5
- Select all segments with ICE ratings less than 60 and annual average daily traffic (AADT) normalization values less than 5

For mapping needs outside the standard production included in this document, the mapping request process is similar. The map templates used for the district and statewide maps can be updated to show a specific area or a specific corridor or segment(s). The standard template is a grey-scale base map that can be changed to something such as an aerial imagery base map to show a part of the state in more detail.

Overall, a variety of different data needs are anticipated as the ICE tool continues to gain exposure. In most cases, these requests can be performed by the user through Road Analyzer or ArcGIS online. However, for more complicated requests, a reasonable time frame will be established by the Office of Systems Planning for data completion.

[1] All outlined requests can be completed by Office of Systems Planning staff.

2. Evaluation criteria and process

When evaluating Iowa's entire Primary Highway System, the data features used in the previous primary highway analysis remained the same. In 2015, segmentation saw a slight change from roughly 28,000 segments to 27,000, which remains the same today. The following sections will summarize the evaluation criteria data that drives the final ICE composite rating.

2.1 Data selection and significance

The data available for use in evaluating highway segments includes many attributes and is maintained in several different locations with RAMS. Each category of data was considered in the evaluation, but ultimately only seven were selected to serve as the core evaluation criteria and foundation of this analysis. These criteria, which are defined in detail in the ensuing section, include the following.

- Annual average daily traffic (AADT), passenger count
- AADT, single-unit truck count
- AADT, combination truck count
- Congestion Index value
- International Roughness Index (IRI) value
- Pavement Condition Index (PCI) rating
- Bridge Condition Index (BCI) rating

While each individual criterion offers a different component, they were chosen due to their collective utility in evaluating the service and structural condition of a roadway segment. As input was gathered during the development of the tool, these criteria very quickly separated themselves from the remaining data. Having a clear distinction aligned well with one of the initial goals for the evaluation tool, which was to derive a single composite condition rating for each roadway segment using the data most critical to the evaluation criteria.

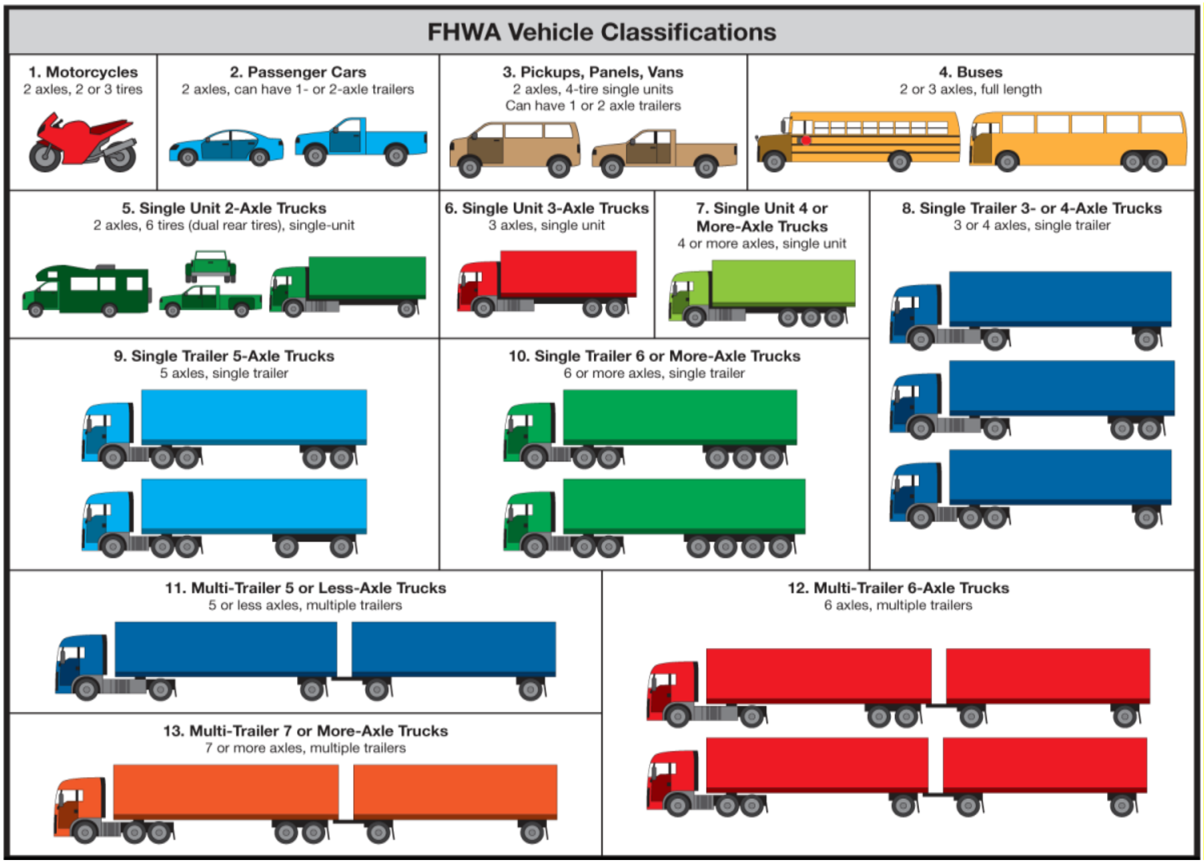
The following information includes a brief definition of the selected data and explains how it is collected and summarized.

AADT

AADT is a general unit of measurement for traffic, which represents the annual average daily traffic that travels a roadway segment. Vehicular traffic counts are collected on a short-term duration using portable counting devices and on a long-term duration using permanent counting devices. Short duration counts ensure geographic diversity and coverage while long-term counts help understand time-of-day, day-of-week, and seasonal patterns. Long-term counts are also used to accurately adjust short duration counts into accurate annual estimates of conditions.

The Federal Highway Administration (FHWA) Traffic Monitoring Guide classifies traffic into 13 categories and can be summarized into fewer categories depending on the desired summary level. The 13 categories are illustrated in Figure 2.1.

Figure 2.1: FHWA 13-Classification



Source: FHWA

Within RAMS, the standard traffic count summary categories include passenger car and motorcycles, single-unit trucks, and combination trucks. In the ICE dataset, passenger traffic includes vehicle classifications 1 through 3, single-unit truck traffic includes classifications 4 through 7, and combination truck traffic includes classifications 8 through 13.

Congestion index

The congestion index is a measure that characterizes operational conditions within the flow of traffic. This measure is expressed as a volume-to-capacity (V/C) ratio for a roadway segment. The ratio is an indicator of highway capacity sufficiency, where it is estimated that a facility is congesting as V/C approaches a value of 1. This index emphasizes the relative congestion of primary highway segments to one another.

For the purposes of this report, the numerator or volume portion of the V/C ratio is derived from the most recent observed daily traffic data for segments on the primary highway system. Truck traffic is increased by a factor of 1.5 to account for this vehicle type's more significant impact on congestion. Total traffic is then halved to account for directionality (assumed to be 50 percent in each direction) and then converted to an hourly rate by applying a peak-hour factor that is based on each segment's area type (i.e., rural, suburban, or urban) and data from the Iowa DOT's automatic traffic recorders.

The denominator or capacity portion of the ratio is calculated in a manner that is consistent with the method used for iTRAM, as well as guidelines contained in the Transportation Research Board's *Highway Capacity Manual*. The calculation establishes a capacity by applying a per-lane capacity figure to the number of through lanes on each segment, ultimately providing a reasonable planning estimate of a segment's capacity. The source of the data used for these calculations at the Iowa DOT is RAMS.

IRI value

IRI is a numerical roughness index that is commonly used to evaluate and manage road systems. It is calculated using measured longitudinal road profile data to determine units of slope of a roadway segment. The profile data can be obtained using anything from traditional surveying equipment to more modern inertial profiling systems. There is no defined upper limit to IRI.

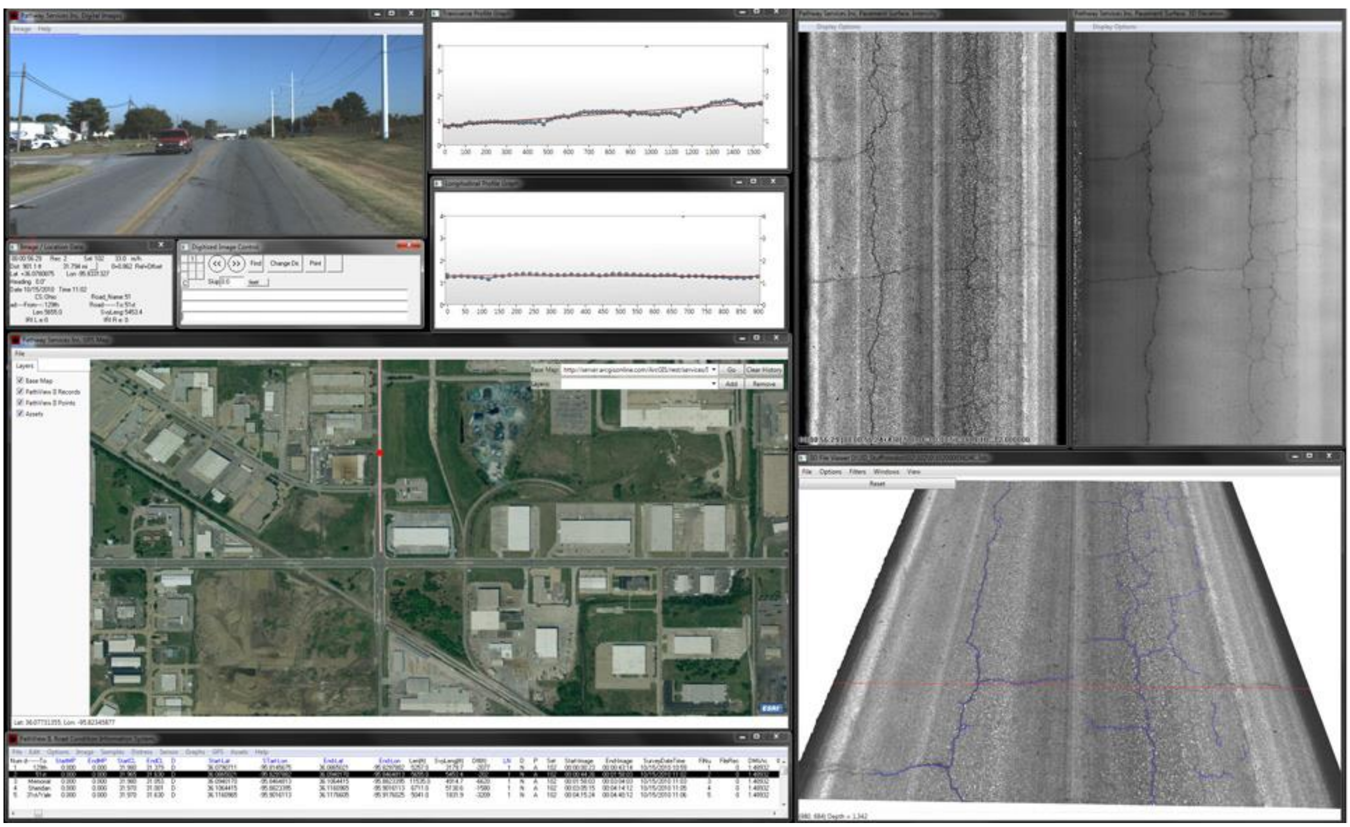
In Iowa, IRI is primarily measured on a rotating two year cycle. As of 2016, the Iowa DOT contracts the pavement data collection process with a company called Pathway Services. Their PathRunner Data Collection Vehicle is a state-of-the-art service tool equipped with the latest computer, sensor, and video equipment designed to efficiently collect data and video images of the roadway and pavement surface.

PCI rating

Similar to IRI, the Iowa DOT uses the same collection method for PCI data. PCI is a numerical index developed by the United States Army Corps of Engineers, used to indicate the condition of pavement. The index is based on a field survey of the pavement and is expressed as a value between 0 and 100, with 100 representing excellent condition. Generally, the surveying process involves segmenting the pavement section into sample units; determining how many units are to be tested; recording the type, extent, and severity of pavement distress; calculating a value for these distresses; and then subtracting that value from a base value to derive the PCI value.

As Figure 2.2 illustrates, the appearance of a pavement is not always an indicator of its underlying condition, which is also considered in PCI. Many different variables factor into the Iowa DOT's calculation of PCI on roadway segments, including age, percent of life used, high/moderate/low severity longitudinal cracking, IRI, aggregate class durability, pavement thickness, friction value, moderate severity patching, total asphalt depth, relative structural ratio, and base thickness. Ultimately, the condition index is a reasonable indicator of the pavement condition of a network.

Figure 2.2: Pathway services software views



BCI rating

The bridge condition index (BCI) provides a method of evaluating roadway bridge structures by calculating four separate factors to obtain a numeric value that is indicative of a structure's overall condition/sufficiency. These factors include structural condition, load carrying capacity, horizontal and vertical clearances, width, traffic levels, type of roadway it serves, and the length of out-of-distance travel id the bridge were closed.   From there, various reductions are then factored into the rating. Table 2.1 highlights the information that factors into the rating.

The index rating is then calculated using the following formula: S1+S2+S3-S4. A value of 100 represents a wholly sufficient structure, while a value of zero represents an insufficiency or deficient structure. The full structure inventory contains dozens of fields of data, which are used to meet several federal reporting requirements that are set forth in the National Bridge Inspection Standards (23 CFR 640.3). The information is collected through on-site inspections, which are conducted year round.

Prior to the 2017 analysis, the Federal Highway Administration's Structure Inventory and Appraisal (SIA) Sufficiency rating was incorporated. However, due to the accuracy based on the tailored analysis and real-time inspection/survey updates provided by the Iowa DOT's Office of Bridges and Structures staff, it has replaced this rating system.

Table 2.1: Bridge Condition Index rating

Summary	Alias	Weight	Item description
Structural Adequacy & Safety	S1	55%	Superstructure
			Substructure
			Deck
			Culvert
			Inventory Ranking
Serviceability and Functional Obsolescence	S2	30%	Bridge Roadway Width
			Under clearances
			Waterway Adequacy
Essentiality for Public Use	S3	15%	Detour Length
			AADT
			Highway System Designation
Special Reductions	S4	11%	Fracture Critical
			Fatigue Vulnerability
			Channel Protection

Source: Iowa DOT Office of Bridges and Structures

Due to the shift from FHWA Sufficiency to the BCI rating, there is a noticeable decrease in rating. The BCI differs in weighting principles and is tailored for analysis of Iowa structures. The 2017 average BCI is 73.98, as compared to the 2016 average FHWA Sufficiency rating of 87.43; an overall 14.45-point reduction. There was also a decrease in the number of rated structure; 5,282 structures in the 2016 ICE analysis and approximately 4,632, in 2017.

Data snapshot

In this iteration of ICE, the RAMS data cutoff date was Aug. 1, 2017. This means that all of the current data within the analysis, including AADT, were based on 2016 information. The data snapshot serves as a final cut for this annual analysis and is not updated beyond that point.

All trends and datasets included in the report are represented by the report year. In other words, the denoted year represents the previous year's dataset (i.e, 2017 is equivalent to 2016 data values).

2.2 Linear overlay and system segmentation

As previously noted, the core of this report contains results from the evaluation tool itself. This tool uses data from both the Iowa DOT's RAMS and PMIS. This data is then merged through the LRS/SA using linear overlay functions to create a single table of data, which is stored in the Iowa DOT's data warehouse, Oracle spatial.

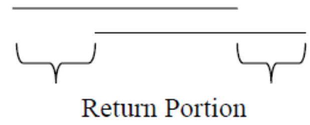
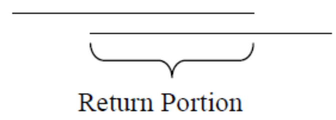
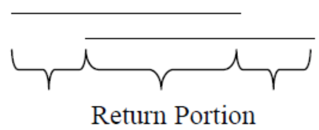
This table is then further analyzed and processed using SQL to achieve the data normalization, weighting, and composite rating outlined in Chapter 3 *Corridor evaluation*. From that point, segment prioritization begins to take shape as the data is prepared for visual representation using GIS. All raw data is processed in Excel using pivot tables.

System segmentation

The linear overlay process returns new segmentation based on specified attributes from the two input spatial data sets. To do so, a datum reference must be produced for each input spatial data set beforehand. A datum reference can be produced in a few different ways; one example would be using coordinate (i.e., latitude and longitude) and route, which is the same method used in this tool.

Once the datasets have a spatial reference, the union operation merges both spatial data sets together and creates segment breaks at every location where the specified attributes break in the previously independent data sets. In applying the analysis used in this report, the primary system was divided into more than 27,000 segments using a combination of the union and intersection operators (see Figure 2.3).

Figure 2.3: Linear overlay functions

Operator	ID	Returns	Visual Definition
Difference	1	Linear portion of an input event and reference event that do not overlay each other.	
Intersection	2	Linear portion of an input event that completely overlays the reference event.	
Union	3	Union of the difference and intersection sets.	

2.3 Normalization and weighting

When developing a composite rating that could be assigned to roadway segments, a statistical process was used that normalized criteria values to a common scale. The resulting values were calculated further using an appropriate weighting or numeric multiplier. This process is described below and highlighted in Table 2.2.

Value ranges

The first step in the process was to examine the range of possible values for the seven evaluation criteria identified in Section 2.1. For three of the seven criteria, a logical and fixed scale was used. The ranges for these criteria are noted below.

- Congestion index: 0 - 1.00+
- PCI: 0 - 100
- BCI: 0 - 100

For the remaining four criteria, the range of possible values did not necessarily have a strict upper bound. For these criteria, the upper bound was set at a level where only five percent of highway segments would currently exceed this value. The logic behind this is explained in the following subsection. The resulting ranges for these criteria are noted below.

- AADT, combination truck count: 0 – 11,130+
- AADT, passenger count: 0 - 50,460+
- AADT, single-unit truck count: 0 – 2,560+

- IRI: 0 - 192+

This step is represented in the first two columns of Table 2.2.

Normalization to common scale

The next step in the process was to normalize the ranges of possible values for the evaluation criteria to a common scale. This was done to establish a common base to which the weighting would eventually be applied. With the goal of ultimately creating a maximum composite rating of 100, a common scale of 1 to 10 was used for the seven criteria.

To limit the summarization or “washing out” of data in the normalization process, the ranges of possible values identified previously were distributed across the 1 to 10 scale in equal increments. This was achieved by setting the upper bounds for combination truck count, passenger count, and single-unit truck count to a level where only five percent of segments by mileage of the primary system would currently exceed this value, thus allowing for a high level of distinction between segments.

The ranges of possible values were assigned to the 1 to 10 scale in such a way that a lower value indicates poorer conditions/greater need/higher priority, and vice versa. For example, the lowest PCI values would be assigned a normalized value of 1 and the highest PCI values would be assigned a 10. For other criteria, such as IRI, the scale was flipped where the highest IRI values would be assigned a normalized value of 1 and the lowest IRI values would be assigned a 10. This step is represented in the third and fourth columns of Table 2.2.

Weighting and multipliers

Once the seven criteria had been normalized to a common scale, appropriate weighting could be applied. Since the goal was to create a maximum composite rating of 100, weighting was initially viewed in terms of a percentage. The criteria that would have greater influence on the composite rating were assigned a higher percentage, and vice versa. Initial percentages were identified through working group and internal stakeholder discussions.

From the percentages, which summed to 100, multipliers were derived to allow for a maximum composite rating of 100. The percent weighted values were divided by 10 to identify the multipliers for each criterion. For example, if a criterion was given a weighting of 25 percent, its multiplier value would be 2.5. These multipliers would then be applied to the normalized value from the 1 to 10 scale for each criterion. For segments without a bridge, BCI received a normalized value of 10, meaning a segment with no structures would receive no additional priority for that particular criterion.

After the multipliers are applied to each normalized value across all seven criteria, the values are summed to calculate the composite rating. This step is represented in the final three columns of Table 2.2. The process was then applied to every segment of the Primary Highway System, allowing for comprehensive screening and further prioritization.

It should be noted that, as part of the vetting process outlined in this section, a basic sensitivity analysis was conducted to measure the effects of different weighting. While the working group was pleased with the output that resulted from the weighting identified in Table 2.2, there was a desire to examine other weighting options and the effects of shifting weight from the condition criteria to the traffic and congestion criteria.

Generally, the results were not desirable as this shift resulted in an unreasonable bias toward urban areas. From these discussions, the working group concluded that the weighting presented in Table 2.2 was most appropriate.

AADT normalization and weighting structure

Due to the variation of AADT across the statewide primary system, a one size fits all approach was avoided for developing a range of values used to calculate the normalized values. Thus, a different approach from the original weighting structure in the Interstate Condition Evaluation had to be taken. To address the variation of AADT across the state, the range values were broken up by the following route types.

- Interstate
- Non-interstate divided
- Non-divided

Each range for the three different route types was calculated based off of the top five percent of segments by mileage. After sorting largest to smallest by AADT, a cumulative sum was calculated up to the five percent value of the total mileage. The associated AADT value at the five percent mark became the upper threshold. That AADT value was then divided by nine to define the 10 different normalization breaks. Table 2.2 gives a detailed look at the breakout of the ICE criteria weighting structure.

Table 2.2: Infrastructure Condition Evaluation (ICE) normalization and weighting structure

Criteria	Value Range	Interstate Range	Non-interstate divided Range	Non-divided Range	Normalized Value	Weighting	Multiplier	Max Score
PCI	0 - 100	1 - 10			1	25%	2.5	25
		11 - 20			2			
		21 - 30			3			
		31 - 40			4			
		41 - 50			5			
		51 - 60			6			
		61 - 70			7			
		71 - 80			8			
		81 - 90			9			
		91 - 100			10			
BCI	0 - 100	1 - 10			1	25%	2.5	25
		11 - 20			2			
		21 - 30			3			
		31 - 40			4			
		41 - 50			5			
		51 - 60			6			
		61 - 70			7			
		71 - 80			8			
		81 - 90			9			
		91 - 100			10			
IRI	0 - 192+	>192			1	15%	1.5	15
		170.67 - 192			2			
		149.33 - 170.67			3			
		128 - 149.33			4			
		106.67 - 128			5			
		85.33 - 106.67			6			
		64 - 85.33			7			
		42.67 - 64			8			
		21.33 - 42.67			9			
		0 - 21.33			10			
Combination Truck AADT	0 - 11,130+	>11130	>2060	>500	1	15%	1.5	15
		9890-11130	1830-2060	440-500	2			
		8660-9890	1600-1830	390-440	3			
		7420-8660	1370-1600	330-390	4			
		6180-7420	1140-1370	280-330	5			
		4950-6180	910-1140	220-280	6			
		3710-4950	690-910	170-220	7			
		2470-3710	460-690	110-170	8			
		1240-2470	230-460	60-110	9			
		0-1240	0-230	0-60	10			
Single-Unit Truck AADT	0 - 2,260+	>2560	>880	>270	1	5%	0.5	5
		2280-2560	780-880	240-270	2			
		1990-2280	680-780	210-240	3			
		1710-1990	590-680	180-210	4			
		1420-1710	490-590	150-180	5			
		1140-1420	390-490	120-150	6			
		850-1140	290-390	90-120	7			
		570-850	200-290	60-90	8			
		280-570	100-200	30-60	9			
		0-280	0-100	0-30	10			
Passenger AADT	0 - 50,460+	>50460	>22960	>5730	1	5%	0.5	5
		44850-50460	20410-22960	5090-5730	2			
		39240-44850	17850-20410	4460-5090	3			
		33640-39240	15300-17850	3820-4460	4			
		28030-33640	12750-15300	3180-3820	5			
		22420-28030	10200-12750	2550-3180	6			
		16820-22420	7650-10200	1910-2550	7			
		11210-16820	5100-7650	1270-1910	8			
		5610-11210	2550-5100	640-1270	9			
		0-5610	0-2550	0-640	10			
Congestion Index (V/C)	0 - 1.00+	>1.00			1	10%	1.0	10
		0.89 - 1.00			2			
		0.78 - 0.88			3			
		0.67 - 0.77			4			
		0.56 - 0.66			5			
		0.45 - 0.55			6			
		0.34 - 0.44			7			
		0.23 - 0.33			8			
		0.12 - 0.22			9			
		0 - 0.11			10			
						100%		100

Safety factor addition

Using the Office of Traffic and Safety's segment level crash dataset from 2012-2016, crash rate was calculated for each segment within the Primary Highway Network and added to the existing dataset. The calculated crash rate was based on a formula involving crashes per 100 million vehicle-miles of travel, 2012-2016 crash data, length of roadway, and AADT.

To define the normalization value, a threshold for the average weighted crash rate by corridor was defined in a similar approach as the AADT normalization process described in the previous section. Each range was calculated based off of the top five percent of segments by mileage for the three different route types. The associated crash rate value at the five percent mark become the upper threshold and was divided by nine to define the normalization breaks. This process was repeated for each route type.

Table 2.3 shows the normalized values for crash rates by route type. This criterion is not directly included within the calculation of the final composite rating and is meant to serve as an indicator for measuring safety at the corridor level within this report.

Table 2.3: Safety crash rate normalized and weighted structure

	Interstate	Non-interstate divided	Non-Divided	Normalized Value
Corridor Crash Rate 0 - 320+	>90	>320	>200	1
	80-90	280-320	180-200	2
	70-80	250-280	150-180	3
	60-70	210-250	130-150	4
	50-60	180-210	110-130	5
	40-50	140-180	90-110	6
	30-40	110-140	70-90	7
	20-30	70-110	40-70	8
	10-20	40-70	20-40	9
	0-10	0-40	0-20	10

2.4 Corridor definition

To expand upon the existing corridor designations from the 2015-2016 ICE analysis, an additional 186 corridors were defined in the expansion of the tool. The need for a more granular analysis of the Primary Highway system was the primary motivator for the expansion.

The termini of the corridors were defined using a set of general guidelines driven by logical geographic breaks in the system. Some of the other factors considered in the corridor designation were:

- Breaks at US and Iowa route interchanges
- Transition to and from National Highway System (NHS) designated routes
- Interstate breaks at major interchanges
- Urban, rural, and suburban route transitions
- Incorporated areas
- Lane capacity transitions
- Corridor length
- Duplicate routes if current corridor is not the “primary through route”

  Criteria for duplicate primary through routes:
  - Interstate routes take precedence over US routes.
  - US routes take precedence over Iowa routes.
  - Lower route numbers take precedence over higher route numbers.

These corridors serve as an analytical tool for evaluating roadways between natural breaks on the primary system. Table 2.4 shows a brief summary of these corridors by the number in each category.

Table 2.4: Corridor distribution by route type

Route system	Number of corridors
NHS	302
Interstate	54
Non-interstate divided	111
Non-divided	137
Non-NHS	165
Divided	3
Non-divided	162
Total	**467**

3. Corridor evaluation

The following section provides the results of the corridor analysis. Through the process of a weighted average, each corridor contains a value for each criterion that represents the average across multiple segments that make up the entire corridor. This analysis is meant to provide the reader with a more in-depth look at how each individual criterion influences the final corridor ICE rating.

3.1 Iowa primary corridors by ICE rating

Symbol	Route type
I	Interstate
D	Non-interstate divided
ND	Non-divided
	NHS
	Non-NHS

Table 3.1: Corridor symbology

Due to the number of corridors in this year's ICE analysis, the Office of Systems Planning decided to only include the lowest 25 percent corridors by ICE rating within the main body of the report. To facilitate use and easier reference, a restructured table containing the full list of 467 corridors is contained in Appendix 1 of this report.

Table 3.2 contains a list of the 148 corridors that represent the lowest 25 percent corridors by mileage. To find the lowest 25 percent corridors, the complete 2017 corridor list was sorted from lowest to highest by composite rating. The total system mileage was then multiplied by 25 percent as the number of corridors selected were dependent on the 25 percent mileage total. Corridors having major pavement work completed in 2017 on the initial list of bottom 25 percent corridors were removed and replaced.

Similar to the 2016-2017 report, the corridor data tables include trend arrows to represent yearly change. The 2017 composite rating column shows the updated corridor ICE rating along with a red arrow pointing down, green pointing up, or yellow pointing horizontally to show change from the 2016 ICE rating. This representation is repeated throughout to show the change in the normalization value for each criterion as well.

In addition to the trend arrows, the safety column in Table 3.2 shows the weighted crash rate normalization value across each corridor. This normalization value is described in Section 2.3: *Safety factor addition* and is meant to serve as a corridor level safety indicator.

The symbols defined in Table 3.1 and used throughout Table 3.2 represent the makeup of the corridor. While there is only one column for passenger AADT, single-unit truck AADT, and combo truck AADT, the same traffic breakouts in Table 2.3 apply to each corresponding route type. PCI, IRI, BCI, and congestion were all measured using the same scale. The colored cells in the Rank column represent whether the corridor is located on the NHS as shown in Table 3.1.

Due to the yearly data lag, the 2017 composite ratings and normalizations were calculated using a snapshot of the Iowa DOT's 2016 RAMS and PMIS data. In a few cases, recently completed or ongoing construction work performed by the Iowa DOT may not be reflected in the final ICE rating or within the individual criteria normalization ratings on some corridors. To show this, the footnotes at the bottom of Table 3.2 identify such cases.

Table 3.2: Lowest 25 percent of Iowa Primary Highway System corridors by ICE rating

Rank	Corridor Description	Counties	Corridor Length (MI)	Route Type	2015 Comp Rating	2016 Comp Rating	2017 Comp Rating	PCI	IRI	PASS	SU	COMBO	VC	BCI	SAFETY
1	IA 136 (US 67 to Illinois border)	Clinton	0.5	ND	51.62	52.34	46.15	5	1	1	6	8	5	5	1
2	US 169 (jct of IA 141 to jct of US 30/US 169)	Boone, Dallas	13.8	ND	61.36	57.91	51.82	3	1	5	5	5	8	9	6
3	US 30 (Nebraska border to jct of US 30/I-29)	Harrison	9.5	ND	57.73	61.50	53.23	7	5	5	1	1	8	6	3
4	IA 22 (jct of IA 1 to jct of US 218)	Washington	8.9	ND	57.43	62.97	53.59	7	2	2	2	6	7	6	2
5	US 20 (jct of IA 32 to jct of US 52/US 61)	Dubuque	8.3	D	57.20	53.85	54.61	7	3	1	2	4	1	9	4
6	US 18 (jct of IA 60 to jct of US 71)	O'Brien, Clay	33.5	ND	63.75	64.21	55.21	6	5	6	4	2	9	6	6
7	US 20 (jct of IA 27 to jct of US 218)	Black Hawk	14.5	D	57.05	56.16	55.80	8	5	2	1	1	3	9	1
8	IA 136 (jct of US 151 to jct of US 20)	Dubuque	14.1	ND	59.59	62.01	56.54	4	2	7	4	6	9	8	1
9	US 61 (jct of US 20/US 52 to Wisconsin border)	Dubuque	5.4	D	63.96	63.72	56.80	7	2	3	5	4	4	8	7
10	US 34 (jct of US 275 to jct of US 59)	Mills	14.3	ND	62.63	63.77	57.36	6	5	4	1	2	8	8	6
11	IA 461 (from jct of US 6 to jct of US 67 in Davenport)	Scott	5.7	D	65.73	58.63	57.41	4	1	5	7	10	6	9	6
12	I-35/80 (from jct of IA 28 to IA 415)	Polk	8.0	I	58.09	60.13	58.39	9	6	1	1	1	2	8	3
13	IA 136 (jct of US 20 to jct of IA 3/US 52)	Dubuque	10.1	ND	62.23	61.67	58.53	5	3	4	2	6	8	9	1
14	US 151 (west jct of US 30/US 151 to jct of IA 100/IA 13)	Linn	16.9	D	62.00	58.94	58.95	7	5	3	1	3	4	10	4
15	US 30 (jct of I-380 to jct of to end of four-lane near Lisbon)	Linn	21.7	D	61.80	59.27	59.01	7	4	3	1	3	4	10	5
16	US 218 (end of I-380 to jct of IA 27)	Black Hawk	15.5	D	61.20	60.88	59.04	7	4	2	2	3	6	9	1
17	IA 192 (jct of I-80 to jct of US 6)	Pottawattamie	4.4	D	63.41	60.16	59.05	5	1	4	5	9	5	9	7
18	US 77 (from Nebraska border to jct of I-29)	Woodbury	0.6	D	N/A	N/A	59.26	8	3	1	5	9	3	6	7
19	US 6 (jct of IA 965 to jct of IA 1)	Johnson, Linn, Woodbury	6.0	ND	64.38	65.79	59.67	5	1	1	1	9	4	10	6
20	US 6 (jct of IA 461 to jct of I-74)	Scott	5.6	D	61.08	62.04	60.01	5	1	1	7	10	2	9	3
21	US 52 (jct of IA 32 to jct of US 61)	Dubuque	4.2	ND	73.93	60.95	60.36	6	2	1	1	6	6	10	4
22	IA 150 (jct of I-380 to jct of US 20)	Buchanan, Benton	14.3	ND	59.76	64.69	60.64	7	5	5	3	1	8	9	1
23	US 30 (jct of I-29 to jct of US 59)	Harrison, Crawford	48.0	ND	62.20	62.05	60.91	7	5	5	3	1	8	8	7
24	US 20 (JCT OF US 20/US 75 TO JCT OF I-29)	Woodbury	9.2	D	65.91	61.38	61.48	8	5	3	5	3	4	9	6
25	I-35/80 (jct of US 6 to jct of IA 141)	Polk	4.9	I	59.66	61.55	61.76	9	7	1	1	2	1	9	6
26	US 34 (US 59 to jct of US 71)	Mills, Montgomery	23.2	ND	69.04	66.89	61.85	6	5	6	4	4	8	8	8
27	I-480 (full route)	Pottawattamie	1.8	I	62.65	62.41	62.19	4	1	5	7	10	8	9	8
28	US 61 (beginning of four-lane highway at Burlington to Louisa/Muscatine county line)	Louisa, Des Moines	34.8	ND	68.41	65.03	62.21	7	6	3	3	1	7	9	3
29	US 67 (jct of I-74 to jct of I-80)	Scott	10.6	ND	64.69	63.44	62.21	7	4	1	1	4	7	10	8
30	IA 38 (jct of I-80 to jct of US 30)	Cedar	18.1	ND	66.14	66.48	62.22	5	3	6	5	6	8	8	2
31	IA 4 (jct of US 18 to IA 9)	Palo Alto, Pocahontas	26.2	ND	67.27	67.34	62.26	6	4	7	7	4	9	8	6
32	US 59 (jct of I-80 to jct of US 30)	Crawford, Shelby, Pottawattamie	36.7	ND	67.45	67.85	62.52	7	6	5	5	2	8	8	5
33	IA 1 (jct of US 6 to jct of I-80)	Johnson	5.6	D	68.86	64.41	62.60	5	1	6	7	10	5	9	8
34	IA 10 (from Nebraska border to start of IA 10 NHS near Orange City)	Sioux	29.6	ND	69.06	64.96	62.71	5	4	6	5	5	8	9	8
35	US 136 (jct of US 61 to jct of US 218)	Lee	2.5	ND	64.14	63.77	62.78	6	2	6	1	4	9	10	5
36	IA 150 (jct of US 20 to south jct of IA 3)	Buchanan, Fayette	16.6	ND	67.72	67.31	62.87	7	4	2	1	4	7	8	7
37	IA 922 (jct of I-380 to jct of IA 100)	Linn	5.3	ND	63.39	64.28	62.92	6	3	1	1	8	4	10	8
38	US 218 (jct of IA 1 to jct of I-80)	Johnson	10.8	D	63.90	63.27	63.00	9	8	1	1	1	1	10	5
39	US 59 (jct of IA 3 to jct of US 18)	Cherokee, O'Brien	32.7	ND	69.54	66.98	63.18	5	2	8	7	5	9	9	3
40	US 65 (jct of IA 163 to jct of I-80)	Polk	10.2	D	65.11	66.25	63.21	9	6	3	1	2	4	9	1
41	US 69 (jct of I-235 to jct of I-35/80)	Polk	5.9	D	67.58	63.50	63.26	6	2	4	1	9	5	10	3
42	I-35/I-80 (jct of IA 415 to jct of I-35)	Polk	4.1	I	60.30	62.81	63.28	9	6	1	1	2	4	9	1
43	US 67 (jct of US 61/US 67 to jct of I-74)	Scott	6.8	D	67.79	62.48	63.34	6	1	4	5	10	5	9	8
44	IA 5 (Missouri border to jct of IA 2)	Appanoose	13.6	ND	65.57	69.98	63.50	5	2	6	7	9	9	7	8
45	I-35/80 (jct of IA 141 to jct of IA 28)	Polk	7.9	I	63.31	64.86	63.59	10	8	1	1	1	2	9	7
46	US 18 (jct of US 71/US 18 to jct of US 169)	Kossuth, Clay, Palo Alto	54.7	ND	65.35	66.75	63.76	7	4	4	4	3	8	9	7
47	IA 38 (jct of US 20 to jct of IA 3)	Delaware	11.6	ND	69.75	67.18	63.76	3	1	9	8	10	10	8	3
48	IA 39 (jct of IA 175 to near jct of US 30 / US 59)	Crawford, Sac	24.5	ND	67.81	70.48	63.83	6	5	8	6	2	9	9	8
49	IA 14 (jct of IA 163 to jct of I-80)	Jasper, Marion	13.0	ND	71.94	67.78	64.02	6	4	5	5	5	9	9	5
50	IA 22 (east jct of IA 70 to jct of US 61)	Muscatine	9.4	ND	71.85	69.32	64.13	8	4	5	6	3	8	8	7
51	IA 22 (jct of IA 22/IA 38 in Muscatine to Buffalo city limits)	Muscatine, Scott	19.8	ND	66.59	67.27	64.27	4	2	7	6	8	9	9	7
52	US 30 (beginning of two-lane near jct of US 63 to beginning of four-lane near jct of US 218)	Benton, Tama	25.3	ND	68.64	69.85	64.42	9	7	4	1	1	7	8	8
53	US 71 (jct of IA 3 to US 18)	Clay, Buena Vista	27.5	ND	63.75	67.14	64.58	6	4	5	5	4	8	9	1

Rank	Corridor Description	Counties	Corridor Length (MI)	Route Type	2015 Comp Rating	2016 Comp Rating	2017 Comp Rating	PCI	IRI	PASS	SU	COMBO	VC	BCI	SAFETY
54	IA 163 (jct of US 69 to jct of US 63)	Polk	9.9	D	69.27	67.32	↓ 64.65	→ 7	→ 3	→ 3	↓ 4	→ 9	↓ 4	→ 10	5
55	IA 92 (south jct of IA 1 to jct of US 61)	Louisa, Washington	17.6	ND	69.48	68.89	↓ 64.89	→ 7	↑ 7	→ 6	↑ 5	→ 1	→ 9	↓ 9	6
56	US 6 (jct of IA 28 to jct of US 69)	Polk	6.1	ND	66.42	65.02	↓ 64.97	↑ 6	↑ 3	→ 1	→ 1	→ 10	↓ 5	→ 10	7
57	US 67 (jct of I-80 to jct of US 30)	Scott, Clinton	21.9	ND	67.99	66.76	↓ 65.00	→ 6	→ 4	→ 3	→ 1	→ 6	→ 8	↓ 9	8
58	IA 330 (jct of US 30 to jct of IA 14)	Marshall	12.8	ND	70.22	72.06	↓ 65.21	→ 6	→ 4	→ 7	→ 7	→ 6	→ 9	↓ 8	7
59	IA 415 (IA 415 NHS near Polk City city limits to jct of IA 141)	Polk	7.6	ND	64.32	66.26	↓ 65.23	→ 6	↑ 4	→ 1	→ 1	↑ 10	↓ 4	↓ 9	6
60	US 18 (jct of US 75 to jct of IA 60)	Sioux, O'Brien	18.4	ND	70.01	67.77	↓ 65.26	→ 8	→ 6	→ 4	→ 2	→ 2	→ 8	↓ 9	7
61	US 6 (jct of I-80 to jct of IA 38)	Cedar, Muscatine	5.5	ND	66.98	72.39	↓ 65.32	→ 8	→ 6	↑ 6	→ 4	↑ 4	→ 8	↓ 7	7
62	I-80 (jct of IA 1 to jct of US 6)	Cedar, Johnson	49.2	I	67.92	70.89	↓ 65.32	→ 9	→ 7	↓ 6	→ 5	↓ 1	→ 5	↓ 8	9
63	US 20 (jct of IA 14 to jct of IA 27)	Black Hawk, Grundy	33.4	D	65.65	65.86	↓ 65.33	→ 8	→ 6	↓ 6	→ 2	→ 1	→ 7	↓ 9	8
64	US 65 (jct of US 18 to beginning of four-lane highway on north side of Mason City)	Cerro Gordo	9.6	ND	67.14	65.76	↓ 65.35	→ 5	→ 1	→ 1	→ 3	→ 7	→ 8	→ 10	6
65	IA 21 (jct of IA 92 to jct of I-80)	Keokuk, Poweshiek	24.9	ND	70.17	71.82	↓ 65.35	→ 6	↓ 4	→ 8	→ 8	→ 6	→ 9	↓ 8	6
66	US 18 (jct of US 169 to jct of I-35)	Hancock, Cerro Gordo, Kossuth	46.8	ND	68.04	69.28	↓ 65.37	→ 7	→ 5	→ 3	→ 4	→ 3	→ 8	↓ 9	1
67	IA 21 (jct of IA 78 to jct of IA 92)	Keokuk	12.4	ND	67.11	67.22	↓ 65.39	→ 4	→ 1	→ 9	→ 9	→ 9	→ 10	↓ 9	5
68	US 61 (jct of I-80 to jct of US 30)	Scott, Clinton, Dubuque	30.2	D	70.39	67.62	↓ 65.53	→ 9	→ 8	↑ 2	→ 3	↓ 2	→ 3	↓ 9	1
69	IA 922 (jct of US 30 to jct of I-380)	Linn	6.3	D	65.40	65.92	↓ 65.53	→ 5	→ 1	→ 5	→ 8	→ 10	→ 6	→ 10	8
70	IA 14 (jct of US 30 to jct of US 20)	Grundy, Marshall	41.6	ND	67.84	68.46	↓ 65.60	→ 7	→ 5	→ 3	→ 5	→ 4	→ 8	↓ 9	9
71	US 63 (jct of US 18 to Minnesota border)	Chickasaw, Howard	35.3	ND	68.64	68.01	↓ 65.71	→ 7	→ 5	→ 6	→ 5	→ 1	→ 9	↓ 9	5
72	IA 7 (jct of IA 3 to US 71)	Buena Vista, Cherokee	19.2	ND	67.06	67.07	↓ 65.72	→ 5	→ 4	→ 5	→ 6	→ 7	→ 8	↓ 9	4
73	IA 187 (jct of US 20 to jct of IA 3)	Fayette, Buchanan	15.6	ND	70.31	70.56	↓ 65.80	→ 5	→ 3	→ 8	→ 8	→ 8	→ 9	↓ 9	1
74	US 52 (jct of US 151 to jct of US 20)	Dubuque	10.4	D	63.37	66.15	↓ 65.88	→ 8	→ 4	→ 5	→ 5	→ 3	→ 6	→ 10	8
75	IA 13 (start of four-lane in Central City to jct of US 20)	Linn, Delaware	19.5	ND	71.94	70.28	↓ 65.88	→ 8	→ 6	→ 4	→ 4	→ 3	→ 8	↓ 8	5
76	IA 23 (jct of IA 149 to jct of IA 92)	Mahaska, Keokuk	16.0	ND	69.68	70.97	↓ 65.99	→ 5	→ 4	→ 7	→ 7	→ 8	→ 9	↓ 8	5
77	US 75 (jct of IA 60/US 75 to jct of US 18)	Sioux, Plymouth	25.9	ND	69.29	66.75	↓ 65.99	→ 8	→ 6	→ 3	→ 2	→ 1	→ 8	↑ 10	8
78	US 30 (jct of IA 922 to jct of I-380)	Linn	8.1	D	62.20	67.84	↓ 66.27	→ 8	↑ 7	→ 2	→ 3	→ 3	→ 3	↓ 9	2
79	US 18 (jct of IA 14 to north jct of US 18/US 63)	Floyd, Chickasaw	20.1	ND	70.04	70.82	↓ 66.31	→ 6	→ 4	→ 6	→ 7	→ 7	→ 9	↓ 8	8
80	IA 150 (jct of US 218 to jct of I-380)	Benton	13.2	ND	70.30	70.28	↓ 66.41	→ 5	→ 3	↓ 5	→ 5	→ 9	→ 9	↓ 8	1
81	US 63 (Missouri border to west jct of US 34/US 63)	Wapello, Davis	34.1	ND	76.64	74.43	↓ 66.41	→ 8	→ 7	→ 4	→ 4	↓ 4	→ 8	↓ 7	7
82	IA 22 (east jct of IA 70 to jct of US 61)	Muscatine, Johnson, Washington	16.0	ND	65.61	69.54	↓ 66.42	→ 8	→ 5	→ 6	→ 6	→ 2	→ 8	↓ 9	5
83	I-80 (jct of I-380/US 218 to jct of IA 1)	Johnson	14.2	I	68.44	70.03	↓ 66.43	→ 9	→ 7	↓ 3	↓ 2	↓ 1	→ 5	↓ 9	8
84	US 30 (beginning of two-lane near jct of IA 1 to north jct of US30/US 61)	Linn, Cedar, Clinton	47.2	ND	62.66	70.30	↓ 66.43	→ 8	→ 6	→ 4	→ 3	↓ 2	→ 8	↓ 8	7
85	IA 415 (jct of US 6 to jct of I-35/80)	Polk	2.3	ND	69.91	67.63	↓ 66.46	→ 7	→ 3	→ 1	→ 1	→ 8	→ 4	→ 10	8
86	US 63 (jct of I-80 to jct of US 20)	Tama, Black Hawk	39.9	ND	69.94	70.16	↓ 66.60	→ 7	→ 4	→ 6	→ 5	→ 5	→ 9	↓ 9	6
87	US 63 (jct of US 218 to north Waterloo city limits)	Black Hawk	7.4	ND	66.31	64.28	↑ 66.65	→ 6	→ 1	→ 1	→ 3	→ 6	→ 8	→ 10	1
88	US 218 (jct of US 61/US 218 to jct of IA 27/US 218)	Lee	13.7	ND	73.44	69.04	↓ 66.75	→ 7	↑ 2	→ 2	→ 4	↓ 6	→ 8	↓ 9	7
89	IA 92 (jct of I-35 to jct of US 69/US 65)	Marion, Warren	12.0	ND	69.34	72.32	↓ 66.85	→ 7	→ 4	→ 3	↓ 1	→ 9	→ 8	↓ 8	6
90	IA 461 (jct of US 6 to jct of I-80)	Scott	5.6	D	72.83	70.13	↓ 66.97	→ 7	→ 5	→ 3	↑ 5	→ 9	→ 5	↓ 8	6
91	IA 5 (jct of IA 2 to jct of US 34)	Monroe, Appanoose	20.5	ND	67.93	69.45	↓ 66.99	→ 6	→ 5	→ 4	↑ 4	→ 6	→ 8	↓ 9	3
92	IA 946 (full route)	Dubuque	2.1	D	69.70	67.48	↓ 67.12	→ 7	→ 2	→ 5	→ 6	→ 8	→ 7	→ 10	4
93	US 6 (jct of I-280 to jct of IA 461)	Scott	10.2	D	69.50	66.66	↑ 67.13	→ 6	↑ 2	↑ 4	→ 7	→ 10	→ 6	→ 10	8
94	US 30 (jct of US 71 to jct of US 169)	Greene, Boone, Carroll	41.6	ND	67.56	68.23	↓ 67.17	→ 8	→ 7	↓ 4	↓ 3	↑ 3	→ 8	↓ 8	7
95	IA 28 (jct of I-235 to jct of US 6)	Polk	1.7	ND	63.14	67.58	↓ 67.18	→ 7	↑ 2	→ 1	↓ 1	→ 10	→ 4	→ 10	1
96	US 218 (jct of IA 92 to jct of IA 1)	Johnson, Washington	48.9	D	68.94	68.59	↓ 67.20	→ 9	→ 5	→ 5	→ 6	→ 2	→ 6	↓ 9	6
97	US 75 (jct of US 20 to jct of IA 60/US 75)	Woodbury, Plymouth	52.2	D	72.06	69.62	↓ 67.24	→ 8	→ 6	→ 6	↑ 6	→ 3	↓ 6	↓ 9	5
98	IA 21 (jct of US 30 to Waterloo city limits)	Tama, Benton, Black Hawk	33.9	ND	72.13	72.66	↓ 67.28	→ 5	→ 4	→ 8	→ 7	→ 8	→ 9	↓ 8	5
99	I-80 (jct of US 169 to jct of I-80/I-235)	Dallas, Polk	25.4	I	64.02	67.36	↓ 67.30	→ 8	→ 5	↓ 4	↑ 6	↑ 5	↓ 4	↓ 9	8
100	I-380 (jct of US 30 to jct of IA 100)	Linn	15.6	I	67.48	69.62	↓ 67.32	→ 8	→ 6	→ 1	↑ 3	→ 7	→ 4	↓ 8	8
101	US 65 (jct of IA 5 to jct of IA 163)	Polk, Warren	17.8	D	64.77	72.21	↓ 67.56	→ 9	→ 6	↓ 3	↓ 1	↓ 4	↓ 4	↓ 9	6
102	IA 2 (jct of US 218 to jct of US 61)	Lee	8.9	ND	68.71	69.92	↓ 67.62	→ 7	→ 2	→ 5	→ 5	→ 7	→ 9	↓ 9	1
103	US 69 (jct of US 30 to end of NHS at north Ames city limits)	Story	6.8	ND	69.80	68.03	↓ 67.67	→ 6	→ 3	→ 1	→ 1	→ 10	→ 6	→ 10	6
104	US 69 (jct of IA 5 to jct of I-235)	Warren, Polk	14.4	D	70.07	68.65	↓ 67.86	→ 7	→ 3	→ 1	→ 5	→ 10	↑ 4	↓ 9	7
105	IA 28 (start of NHS at south Norwalk city limits to jct of IA 5)	Warren, Polk	6.2	D	70.38	71.42	↓ 67.88	→ 6	↑ 3	↓ 5	↓ 6	→ 10	↓ 6	→ 10	7
106	I-35 (jct of IA 160 to jct of US 30)	Story, Polk	41.7	I	67.54	71.78	↓ 67.90	→ 8	→ 7	→ 4	↓ 2	↓ 5	→ 4	↓ 8	8
107	IA 92 (jct of IA 5 to jct of IA 163)	Marion, Mahaska	25.3	ND	70.69	71.34	↓ 67.99	→ 6	→ 5	→ 6	→ 4	→ 5	→ 9	↓ 9	4
108	IA 92 (jct of US 63 to jct of IA1)	Marion, Keokuk, Mahaska,Washington	49.5	ND	69.99	72.18	↓ 68.03	→ 6	→ 3	→ 7	→ 6	↓ 6	→ 9	↓ 8	5
109	IA 51 (jct of US 18 to jct of IA 9)	Allamakee	10.9	ND	74.88	76.22	↓ 68.12	→ 7	→ 6	→ 8	→ 6	↓ 6	→ 9	↓ 7	8
110	IA 38 (jct of US 151 to jct of IA 3)	Jones, Delaware	22.4	ND	69.27	70.42	↓ 68.21	→ 6	→ 2	→ 8	↓ 6	→ 8	→ 9	↓ 9	4
111	IA 3 (jct of US 65 to jct of US 218)	Franklin, Butler, Bremer	35.1	ND	72.23	72.69	↓ 68.24	→ 7	↓ 5	↓ 6	→ 6	→ 5	→ 9	↓ 8	7
112	US 67 (jct of US 30 to north Clinton city limits)	Clinton	5.7	ND	68.85	68.88	↓ 68.27	→ 6	→ 2	→ 1	→ 4	→ 9	→ 8	→ 10	8
113	IA 78 (jct of US 218 to jct of US 61)	Henry, Louisa	20.6	ND	71.78	74.32	↓ 68.30	→ 6	→ 2	→ 9	→ 9	↓ 8	→ 10	↓ 7	7
114	IA 137 (jct of IA 5 to jct of US 63)	Monroe, Wapello	14.7	ND	63.62	70.48	↓ 68.39	→ 6	→ 6	→ 7	→ 3	↓ 4	→ 9	→ 10	6
115	US 20 (jct of I 380 to jct of IA 150)	Buchanan, Black Hawk, Dubuque	32.3	D	70.77	71.03	↓ 68.49	→ 8	→ 4	→ 7	↑ 6	→ 4	→ 7	↓ 9	3
116	I-35 (jct of I-80/I-235 to jct of IA 160)	Polk	8.0	I	67.80	67.99	↑ 68.54	→ 8	→ 7	→ 1	→ 1	↑ 6	↓ 3	→ 10	7
117	IA 9 (end of IA 9 NHS to Illinois border/IA 26)	Allamakee, Winneshiek	32.7	ND	70.56	70.45	↓ 68.55	→ 6	→ 3	→ 6	↓ 6	→ 7	↓ 8	↓ 9	4
118	US 151 (jct of I-80 to west jct of US 30/US 151)	Linn, Iowa, Benton	25.7	ND	71.21	70.88	↓ 68.56	↑ 8	→ 4	→ 2	→ 6	↓ 6	→ 7	↓ 9	6
119	I-80 (jct of US 6 to jct of I-280)	Scott, Cedar	37.3	I	67.46	70.53	↓ 68.64	→ 9	→ 6	→ 7	↑ 6	→ 2	→ 5	↓ 9	9
120	US 141 (jct of US 59 to jct of I-29)	Crawford, Monona, Woodbury	53.0	ND	71.56	73.10	↓ 68.71	→ 6	→ 4	→ 8	→ 8	→ 7	→ 9	↓ 8	5
121	IA 116 (jct of US 218 to jct of IA 3)	Bremer	3.8	ND	65.98	67.07	↑ 68.72	→ 6	→ 3	→ 1	→ 1	→ 8	→ 5	→ 10	8
122	IA 38 (Illinois border to jct of IA 22)	Muscatine	3.1	ND	69.89	69.05	↓ 68.75	→ 6	→ 4	→ 1	→ 2	→ 8	→ 7	↓ 9	8
123	US 65 (jct of US 20 to jct of IA 3)	Franklin, Hardin	23.4	ND	73.11	72.79	↓ 68.91	→ 7	→ 5	→ 6	→ 5	→ 4	→ 9	↓ 9	5
124	US 65 (Mason City limits to Minnesota border)	Worth, Cerro Gordo	21.2	ND	72.59	70.98	↓ 69.00	→ 7	→ 5	→ 6	→ 6	→ 4	→ 8	↓ 9	6
125	IA 14 (jct of IA 5 to jct of IA 163)	Marion, Jasper	14.5	ND	73.42	73.14	↓ 69.01	→ 7	→ 5	→ 5	→ 4	↓ 6	→ 9	↓ 8	7
126	IA 376 (jct of I-29 to jct of IA 12)	Woodbury	8.5	D	72.00	68.98	↑ 69.03	→ 6	→ 2	→ 5	↑ 5	→ 8	→ 6	→ 10	8
127	US 34 (jct of IA 5 to start of four-lane in at west Ottumwa city limits)	Monroe, Wapello	19.5	ND	63.60	75.48	↓ 69.03	→ 9	→ 7	→ 3	→ 4	→ 4	→ 8	↓ 7	6
128	IA 461 (jct of I-280 to jct of US 67)	Scott	8.5	D	72.60	70.79	↓ 69.12	→ 7	→ 4	→ 7	→ 4	→ 9	→ 7	↓ 8	6
129	IA 2 (jct of I-35 to jct of US 65)	Decatur, Wayne	17.9	ND	71.30	73.05	↓ 69.22	→ 5	→ 3	→ 9	↓ 6	→ 8	→ 10	↓ 9	1
130	US 63 (jct of I-80 to jct of US 30)	Poweshiek, Tama	22.9	ND	70.38	72.96	↓ 69.25	→ 7	→ 3	→ 7	→ 4	→ 6	→ 9	↓ 9	6
131	IA 92 (jct of IA 1 to jct of US 218)	Washington	9.5	ND	70.58	71.98	↓ 69.25	→ 8	→ 4	→ 2	→ 5	→ 6	→ 8	↓ 9	8
132	US 59 (jct of US 34 to jct of I-80)	Mills, Pottawattamie	34.9	ND	74.03	74.33	↓ 69.27	→ 7	↓ 3	→ 8	↓ 6	→ 7	↓ 9	↓ 8	8
133	IA 9 (from South Dakota border to jct of IA 60)	Lyon, Osceola	43.3	ND	71.89	71.93	↓ 69.29	→ 6	→ 5	→ 7	↓ 6	→ 6	→ 9	↓ 9	6
134	US 6 (jct of US 69 to jct of I-35)	Polk	2.6	D	63.77	63.70	↑ 69.32	↑ 6	↑ 5	→ 4	↓ 2	→ 8	↓ 5	→ 10	5
135	US 218 (jct of IA 57 to jct of IA 3)	Bremer, Black Hawk	33.0	D	70.71	69.12	↑ 69.33	→ 8	→ 6	→ 5	→ 6	→ 3	→ 6	→ 10	6
136	IA 5 (jct of I-35 to jct of IA 28)	Polk	10.8	D	74.13	73.40	↓ 69.36	→ 9	→ 6	↓ 1	↓ 2	→ 6	↓ 2	→ 10	7
137	US 6 (jct of IA 192 to jct of I-80)	Pottawattamie	7.1	D	66.10	66.00	↑ 69.41	↑ 6	→ 1	→ 6	↑ 8	→ 10	→ 7	→ 10	6
138	US 34 (jct of IA 25 to jct of I-35)	Union, Clarke	31.2	ND	76.72	74.72	↓ 69.45	→ 9	→ 8	↑ 5	↑ 3	→ 3	→ 8	↓ 7	4
139	I-35/80 (west jct of I-35/80 to US 6)	Polk	4.3	I	70.14	68.01	↑ 69.51	→ 9	→ 6	↓ 2	→ 2	↑ 6	→ 2	↓ 9	4
140	IA 3 (jct of I-35 to jct of US 65)	Franklin	9.9	ND	71.41	71.29	↓ 69.51	→ 6	→ 4	→ 6	↓ 5	→ 7	→ 9	→ 10	6
141	IA 13 (jct of US 20 to jct of IA 3)	Delaware	13.7	ND	68.02	70.09	↓ 69.55	→ 6	→ 3	→ 4	→ 7	↓ 7	→ 8	→ 10	10
142	IA 376 (jct of IA 12 to jct of US 75)	Woodbury, Polk, Scott	8.7	D	70.54	69.70	↓ 69.64	→ 7	↑ 5	↑ 7	→ 6	→ 8	→ 7	→ 9	7
143	IA 175 (jct of IA 14 to jct of US 63)	Grundy, Black Hawk	16.5	ND	72.89	72.66	↓ 69.67	→ 6	↓ 3	→ 8	→ 7	→ 7	→ 9	↓ 9	7
144	IA 5 (jct of IA 28 to jct of US 69)	Warren, Polk	12.7	D	72.46	74.16	↓ 69.72	→ 9	→ 6	↓ 2	↓ 2	↓ 5	↓ 3	→ 10	5
145	IA 48 (jct of US 34 to jct of US 6)	Page, Montgomery	23.4	ND	72.95	71.41	↓ 69.76	→ 5	→ 3	→ 7	↑ 7	→ 9	→ 9	↓ 9	5
146	US 71 (jct of US 20 to jct of IA 3)	Buena Vista, Sac	20.0	ND	72.08	71.53	↓ 69.90	→ 7	→ 5	→ 6	↓ 6	→ 4	→ 9	→ 10	8
147	IA 415 (jct I-35/80 to jct of IA 160)	Polk	7.3	D	72.77	70.63	↓ 70.00	→ 7	↑ 5	→ 1	↓ 3	↑ 10	↓ 2	→ 10	4
148	IA 27 (jct of I-80 to jct of US 218/IA 57)	Black Hawk	13.2	D	69.37	69.08	↑ 70.07	↑ 8	→ 4	→ 4	→ 6	→ 7	→ 5	↓ 9	4

3.2 Lowest-rated corridors by individual criterion

To highlight the corridors with the poorest normalization values and raw data values for each of the seven criteria, the "ten lowest-rated" corridor lists were developed to show the bottommost corridors across the entire system. Each table includes a mixture of interstate, non-interstate divided, and non-divided routes across the system. The charts below provide a look at these corridors by each individual criterion, which are sorted by the lowest normalization values first, then by raw values.

Table 3.3: Lowest-rated corridors by PCI

			2017		2016		
Rank	Corridor Description	Route type	Comp Rating	PCI	Comp Rating	PCI	Trend
1	US 169 (jct of IA 141 to jct of US 30/US 169)	ND	51.82	24	57.91	24	→
2	IA 38 (jct of US 20 to jct of IA 3)	ND	63.76	25	67.18	25	→
3	IA 21 (jct of IA 78 to jct of IA 92)	ND	65.39	30	67.22	30	→
4	IA 404 (jct of IA 3 to jct of IA 60)	D	70.45	30	68.10	39	↓
5	IA 461 (from jct of US 6 to jct of US 67 in Davenport)	D	57.41	35	58.63	35	→
6	I-480 (full route)	I	62.41	37	62.19	37	→
7	IA 22 (jct of IA 22/IA 38 in Muscatine to Buffalo city li	ND	64.27	39	67.27	39	→
8	IA 136 (US 67 to Illinois border)	ND	46.15	46	52.34	46	→
9	US 65 (jct of US 18 to beginning of four-lane highway	ND	65.35	41	65.76	41	→
10	IA 187 (jct of US 20 to jct of IA 3)	ND	65.80	42	70.56	42	→

Table 3.4: Lowest-rated corridors by IRI

			2017		2016		
Rank	Corridor Description	Route type	Comp Rating	IRI	Comp Rating	IRI	Trend
1	IA 136 (US 67 to Illinois border)	ND	46.15	314	52.34	230	↓
2	IA 192 (jct of I-80 to jct of US 6)	D	59.05	261	60.16	279	↑
3	US 6 (jct of IA 192 to jct of I-80)	D	69.41	259	66.00	243	↓
4	IA 1 (jct of US 6 to jct of I-80)	D	62.60	240	64.41	239	↓
5	IA 461 (from jct of US 6 to jct of US 67 in Davenport)	D	67.18	232	58.63	236	↑
6	US 52 (jct of IA 64 to jct of US 20)	ND	71.21	230	73.82	230	→
7	IA 38 (jct of US 20 to jct of IA 3)	ND	63.76	226	67.18	232	↑
8	US 6 (jct of IA 965 to jct of IA 1)	ND	59.67	223	65.79	164	↓
9	IA 21 (jct of IA 78 to jct of IA 92)	ND	65.39	218	67.22	218	→
10	US 6 (jct of IA 461 to jct of I-74)	D	60.01	208	62.04	208	→

Table 3.5: Lowest-rated corridors by BCI

			2017		2016		
Rank	Corridor Description	Route type	Comp Rating	BCI	Comp Rating	Suff	Trend
1	IA 136 (US 67 to Illinois border)	ND	46.15	31	52.34	55	↓
2	IA 22 (jct of IA 1 to jct of US 218)	ND	53.59	30	62.97	52	↓
3	US 30 (Nebraska border to jct of US 30/I-29)	ND	53.23	48	61.50	37	↑
4	US 77 (from Nebraska border to jct of I-29)	D	59.26	54	66.90	37	↑
5	US 63 (Missouri border to west jct of US 34/US 63)	ND	66.41	47	74.43	44	↑
6	IA 51 (jct of US 18 to jct of IA 9)	ND	68.12	42	76.22	74	↓
7	IA 85 (jct of US 63 to jct of IA 21)	ND	81.83	18	90.20	38	↓
8	IA 78 (jct of IA 149 to jct of IA 1)	ND	70.98	27	79.18	43	↓
9	IA 78 (jct of US 218 to jct of US 61)	ND	68.30	41	74.32	64	↓
10	IA 5 (Missouri border to jct of IA 2)	ND	63.50	34	69.98	55	↓

Table 3.6: Lowest-rated corridors by passenger AADT

			2017		2016		
Rank	Corridor Description	Route type	Comp Rating	Pass	Comp Rating	Pass	Trend
1	I-235 (jct of IA 28 to jct of US 69)	I	72.10	104,774	73.79	101,321	↓
2	I-235 (jct of I-35/80 to jct of IA 28)	I	74.15	95,950	76.34	92,690	↓
3	I-35/80 (jct of US 6 to jct of IA 141)	I	61.76	86,253	61.55	85,159	↓
4	I-35/80 (from jct of IA 28 to IA 415)	I	58.39	79,601	60.13	83,085	↑
5	I-35/80 (jct of IA 141 to jct of IA 28)	I	63.59	71,331	64.86	75,376	↑
6	I-380 (jct of US 30 to jct of IA 100)	I	67.32	66,337	69.62	63,816	↓
7	I-235 (jct of US 69 to west jct of I-35/80)	I	71.40	63,852	72.95	59,892	↓
8	I-35/I-80 (jct of IA 415 to jct of I-35)	I	63.28	62,112	62.81	69,943	↑
9	I-35 (jct of I-80/I-235 to jct of IA 160)	I	68.54	60,335	67.99	63,345	↑
10	I-35 (jct of IA 5 to jct of I-80/I-235)	I	75.97	53,708	76.84	50,162	↓

Table 3.7: Lowest-rated corridors by single-unit truck AADT

			2017		2016		
Rank	Corridor Description	Route type	Comp Rating	SU	Comp Rating	SU	Trend
1	I-35/80 (jct of US 6 to jct of IA 141)	I	61.76	4,468	61.55	3,002	↓
2	I-35/80 (from jct of IA 28 to IA 415)	I	58.39	3,926	60.13	3,255	↓
3	I-35/80 (jct of IA 141 to jct of IA 28)	I	63.59	3,765	64.86	2,957	↓
4	I-235 (jct of IA 28 to jct of US 69)	I	72.10	3,273	73.79	2,332	↓
5	I-35/I-80 (jct of IA 415 to jct of I-35)	I	63.28	3,142	62.81	2,895	↓
6	I-235 (jct of US 69 to west jct of I-35/80)	I	71.40	2,928	72.95	2,365	↓
7	I-35 (jct of I-80/I-235 to jct of IA 160)	I	68.54	2,744	67.99	2,541	↓
8	I-235 (jct of I-35/80 to jct of IA 28)	I	74.15	2,572	76.34	1,566	↓
9	US 65 (jct of IA 163 to jct of I-80)	D	63.21	1,179	66.25	1,077	↓
10	US 218 (jct of IA 1 to jct of I-80)	D	63.00	1,090	63.27	1,065	↓

Table 3.8: Lowest-rated corridors by combo-unit truck AADT

			2017		2016		
Rank	Corridor Description	Route type	Comp Rating	Combo	Comp Rating	Combo	Trend
1	I-35/80 (jct of IA 141 to jct of IA 28)	I	63.59	11302	64.86	11505	↑
2	I-35/80 (from jct of IA 28 to IA 415)	I	58.39	11218	60.13	11460	↑
3	I-80 (jct of IA 1 to jct of US 6)	I	65.32	11179	70.89	10876	↓
4	I-80 (jct of I-380/US 218 to jct of IA 1)	I	66.43	11173	70.03	10795	↓
5	US 218 (jct of IA 1 to jct of I-80)	D	63.00	2649	63.27	2589	↓
6	US 20 (jct of IA 27 to jct of US 218)	D	55.80	2390	56.16	2935	↑
7	US 18 (jct of US 65 to jct of US 218/US 18)	D	70.27	2079	71.94	2019	↓
8	US 18 (jct of I-35 to jct of US 65)	D	70.41	2033	73.82	1969	↓
9	US 20 (jct of IA 14 to jct of IA 27)	D	65.33	2030	65.86	2532	↑
10	US 30 (beginning of two-lane near jct of US 63 to beginning of four-lane near jct of US 218)	ND	64.42	876	69.85	850	↓

Table 3.9: Lowest-rated corridors by congestion index (V/C ratio)

			2017		2016		
Rank	Corridor Description	Route type	Comp Rating	V/C	Comp Rating	V/C	Trend
1	US 20 (jct of IA 32 to jct of US 52/US 61)	D	54.61	1.29	53.85	1.17	↓
2	US 218 (jct of IA 1 to jct of I-80)	D	63.00	1.08	63.27	1.05	↓
3	I-235 (jct of I-35/80 to jct of IA 28)	I	74.15	1.05	76.34	0.91	↓
4	I-35/80 (jct of US 6 to jct of IA 141)	I	61.76	1.02	61.55	1.02	↓
5	I-235 (jct of IA 28 to jct of US 69)	I	72.10	1.01	73.79	0.90	↓
6	I-35/80 (from jct of IA 28 to IA 415)	I	58.39	0.98	60.13	1.01	↑
7	I-35/80 (jct of IA 141 to jct of IA 28)	I	63.59	0.97	64.86	0.92	↓
8	US 6 (jct of IA 461 to jct of I-74)	D	60.01	0.96	62.04	0.95	↓
9	IA 5 (jct of I-35 to jct of IA 28)	D	69.36	0.93	73.40	0.75	↓
10	IA 415 (jct I-35/80 to jct of IA 160)	D	69.51	0.92	68.01	1.09	↑

Table 3.10 Lowest rated-corridors by average crash rate

			2017		2016		
Rank	Corridor description	Route	Comp Rating	Crash rate	Comp Rating	Crash rate	Norm
1	US 52 (jct of IA 32 to jct of US 61)	ND	60.36	885.2	60.95	1510.4	1
2	IA 461 (from jct of US 6 to jct of US 67 in Davenport)	D	57.41	775.9	58.63	1597.4	1
3	US 69 (jct of US 30 to end of NHS at north Ames city limits)	ND	67.67	658.8	68.03	1078.3	1
4	US 69 (jct of I-235 to jct of I-35/80)	D	63.26	625.3	63.50	1195.5	1
5	IA 1 (jct of US 6 to jct of I-80)	D	62.60	600.3	64.41	864.3	1
6	US 67 (jct of US 30 to north Clinton city limits)	ND	68.27	594.1	68.88	1084.8	1
7	US 69 (jct of IA 5 to jct of I-235)	D	67.86	593.3	68.65	921.6	1
8	US 6 (jct of I-35 to jct of I-80)	D	79.07	583.4	74.98	995.2	1
9	US 6 (jct of IA 28 to jct of US 69)	ND	64.97	578.7	65.02	1112.7	1
10	US 6 (jct of IA 965 to jct of IA 1)	ND	59.67	514.0	65.79	943.7	1

Criteria across multiple corridors

Table 3.11 shows the list of corridors that were found in more than one of the preceding lowest-rated corridor lists. This table can be used to help identify corridors that are performing among the worst across the system on multiple levels. Although some corridors may have multiple criteria that rank in the bottommost part of the system, the seven-factor ICE rating of the corridor may not be among the worst of the 467 statewide corridors.

Table 3.11: Lowest-rated corridors across multiple criteria

Corridor description	2017 Comp Rating	2016 Comp Rating	PCI	IRI	BCI	Pass	SU	Combo	VC	Safety
I-35/80 (from jct of IA 28 to IA 415)	58.39	60.13				X	X	X	X	
I-35/80 (jct of IA 141 to jct of IA 28)	63.59	64.86				X	X	X	X	
I-35/80 (jct of US 6 to jct of IA 141)	61.76	61.55				X	X		X	
US 218 (jct of IA 1 to jct of I-80)	63.00	63.27					X	X	X	
IA 461 (from jct of US 6 to jct of US 67 in Davenport)	67.18	58.63	X	X						X
I-235 (jct of IA 28 to jct of US 69)	72.10	73.79				X	X		X	
I-235 (jct of I-35/80 to jct of IA 28)	74.15	76.34				X	X		X	
IA 136 (US 67 to Illinois border)	46.15	52.34		X	X					
US 6 (jct of IA 965 to jct of IA 1)	59.67	65.79		X						X
US 6 (jct of IA 461 to jct of I-74)	60.01	62.04		X					X	
IA 1 (jct of US 6 to jct of I-80)	62.60	64.41		X						X
I-35/I-80 (jct of IA 415 to jct of I-35)	63.28	62.81				X	X			
IA 38 (jct of US 20 to jct of IA 3)	63.76	67.18	X	X						
IA 21 (jct of IA 78 to jct of IA 92)	65.39	67.22	X	X						
I-35 (jct of I-80/I-235 to jct of IA 160)	68.54	67.99				X	X			
I-235 (jct of US 69 to west jct of I-35/80)	71.40	72.95				X	X			

3.3 Mapping analysis

The following section offers a series of statewide and maintenance district maps showing the ICE rating for non-divided and divided highways, including interstates.

Figure 3.1: Statewide divided primary roads

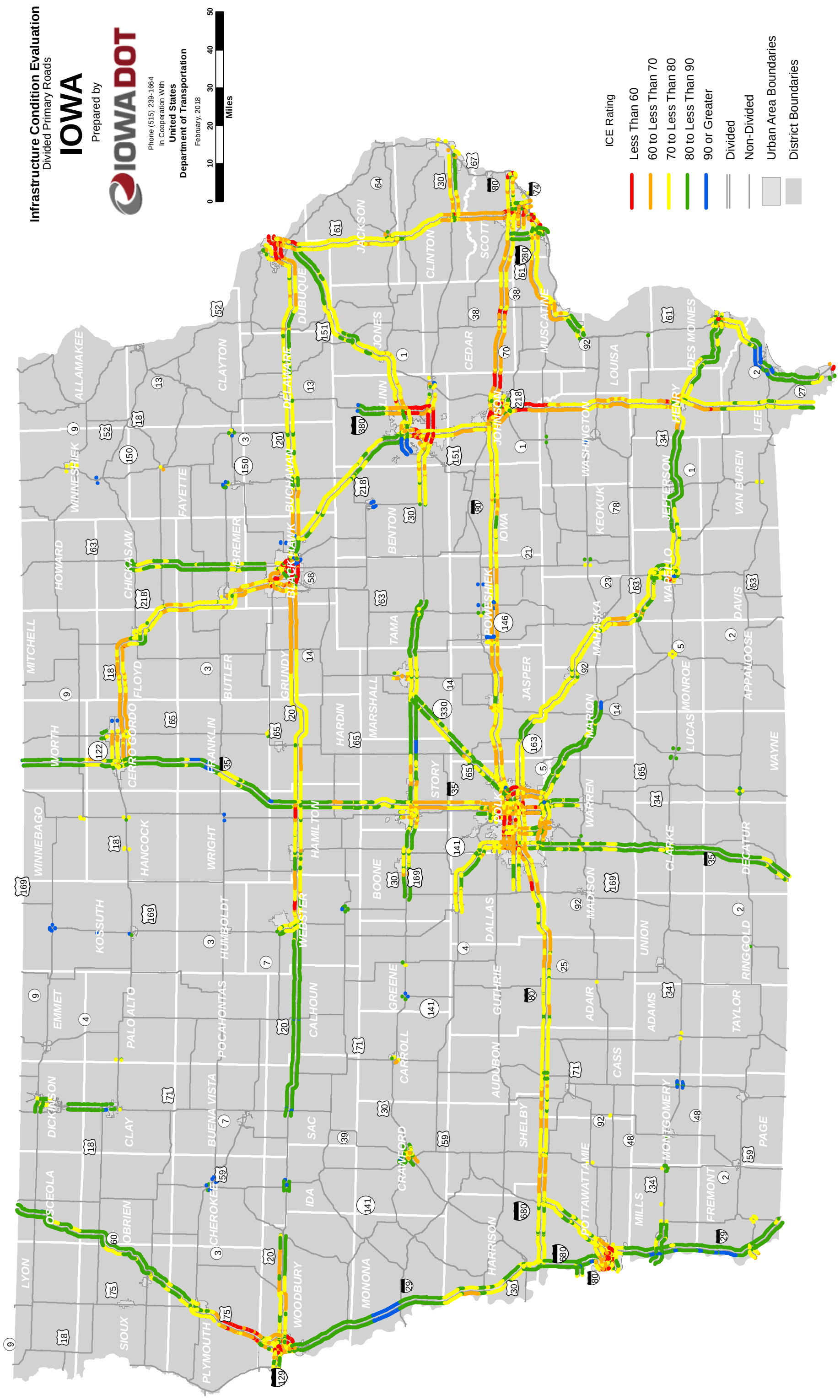


Figure 3.2: District 1 divided primary roads

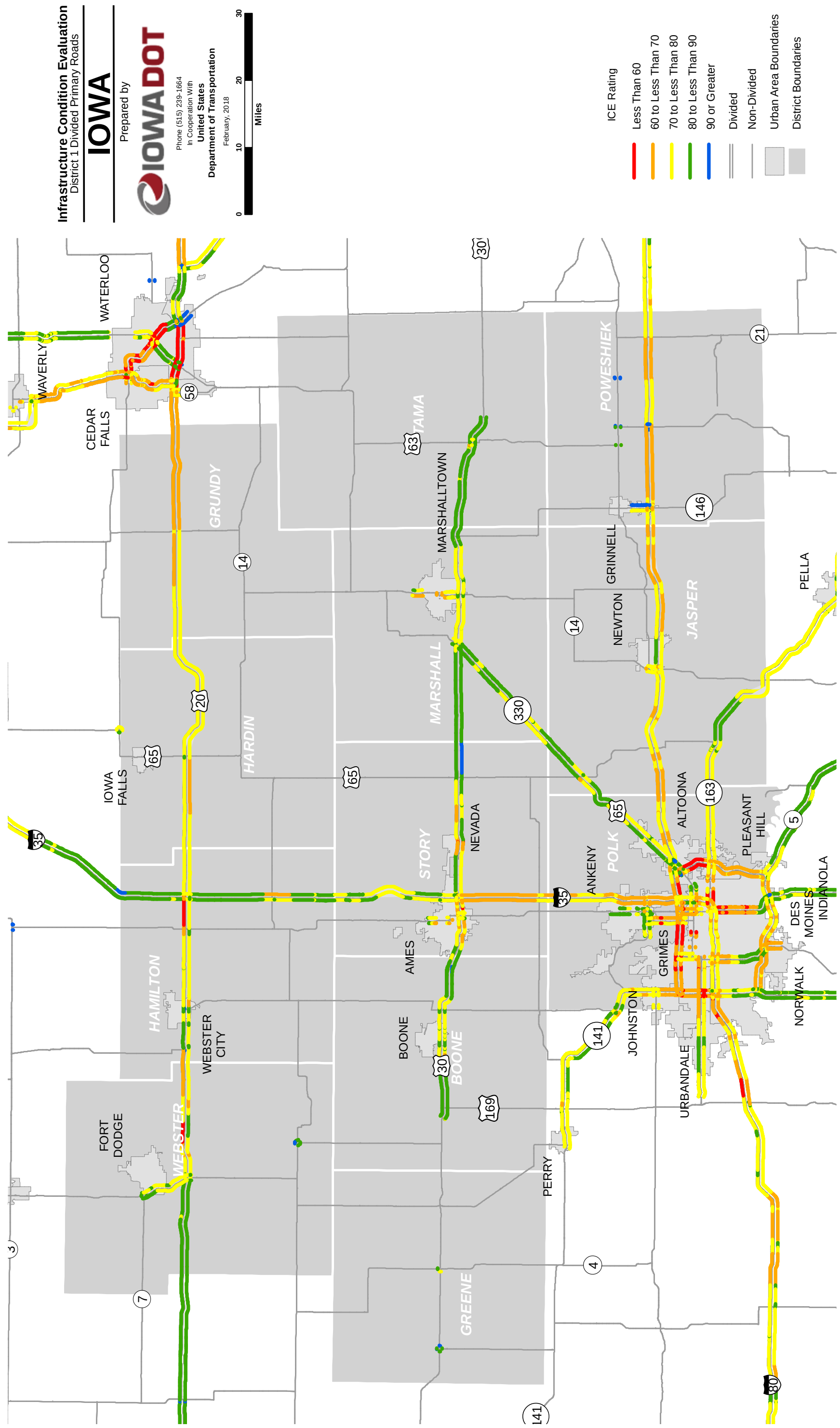


Figure 3.3: District 2 divided primary roads

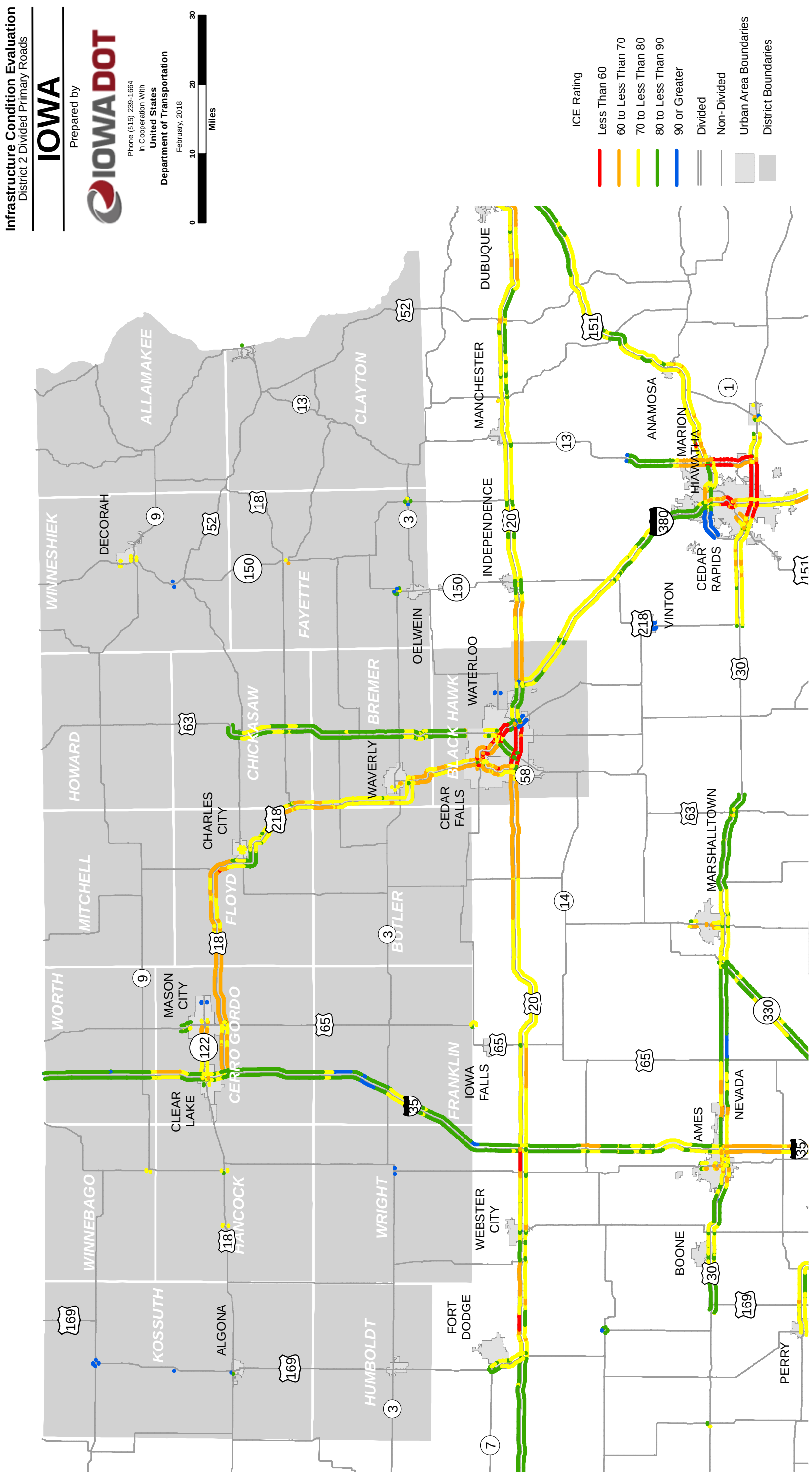
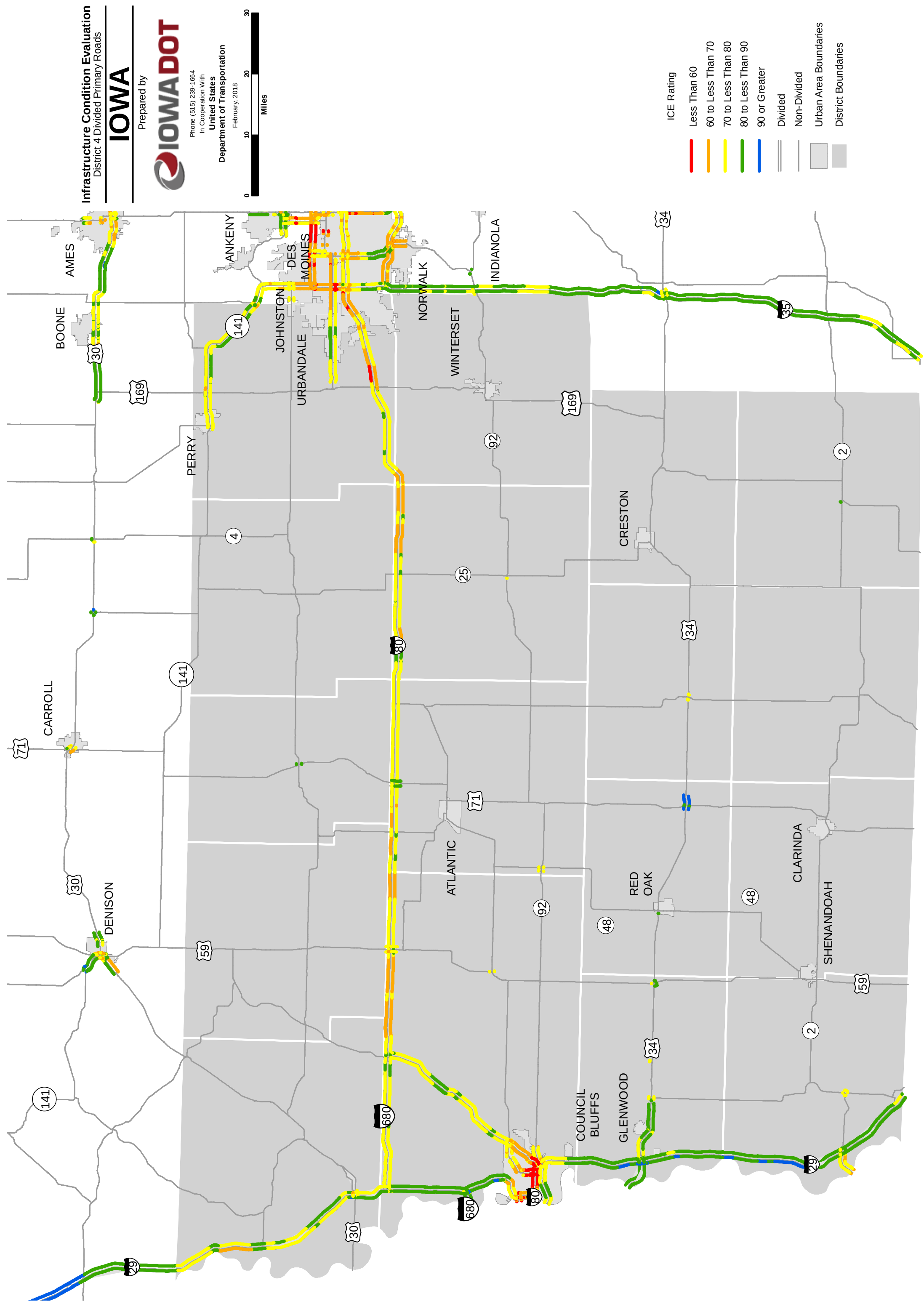


Figure 3.4: District 3 divided primary roads

Figure 3.5: District 4 divided primary roads



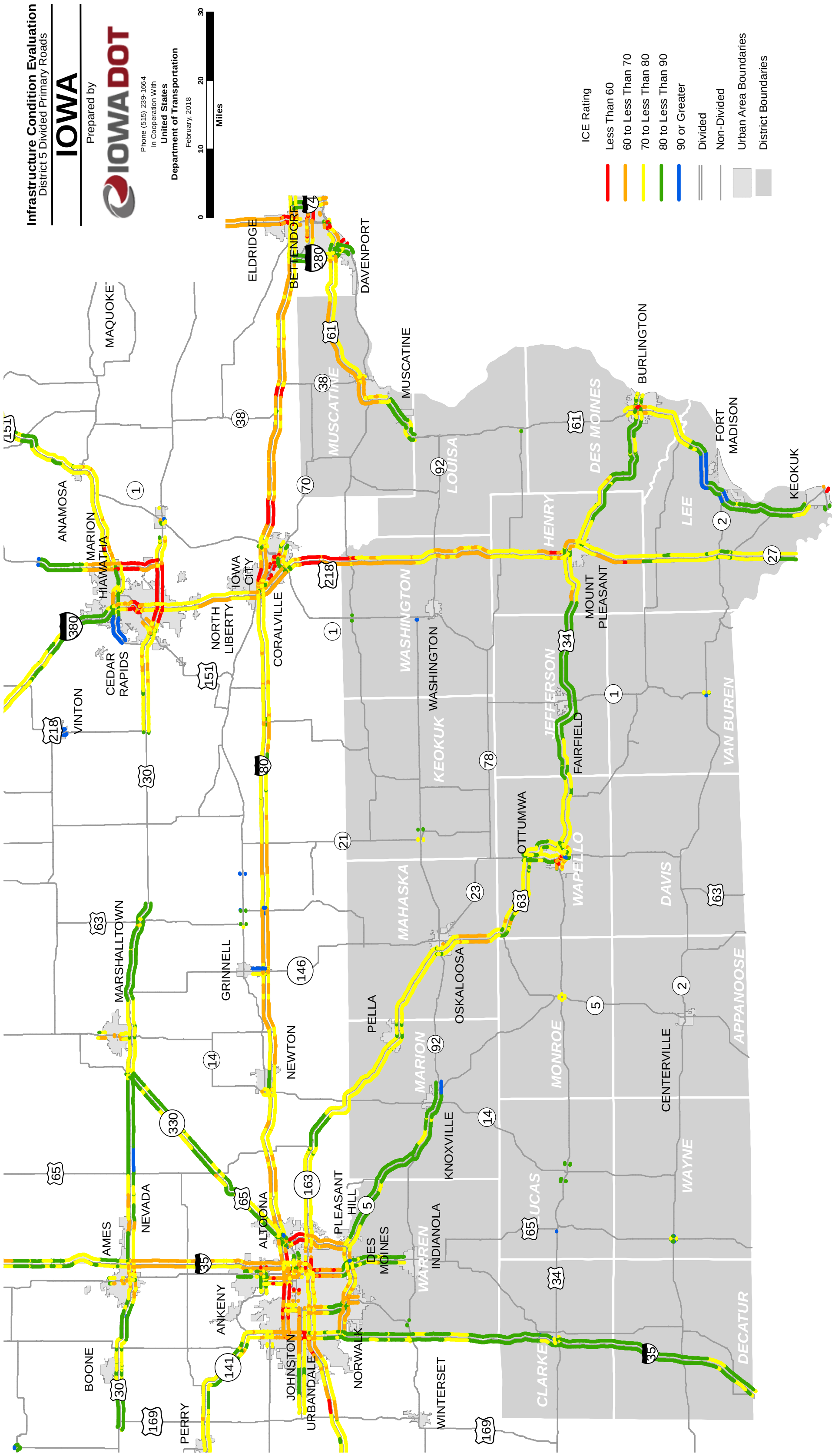
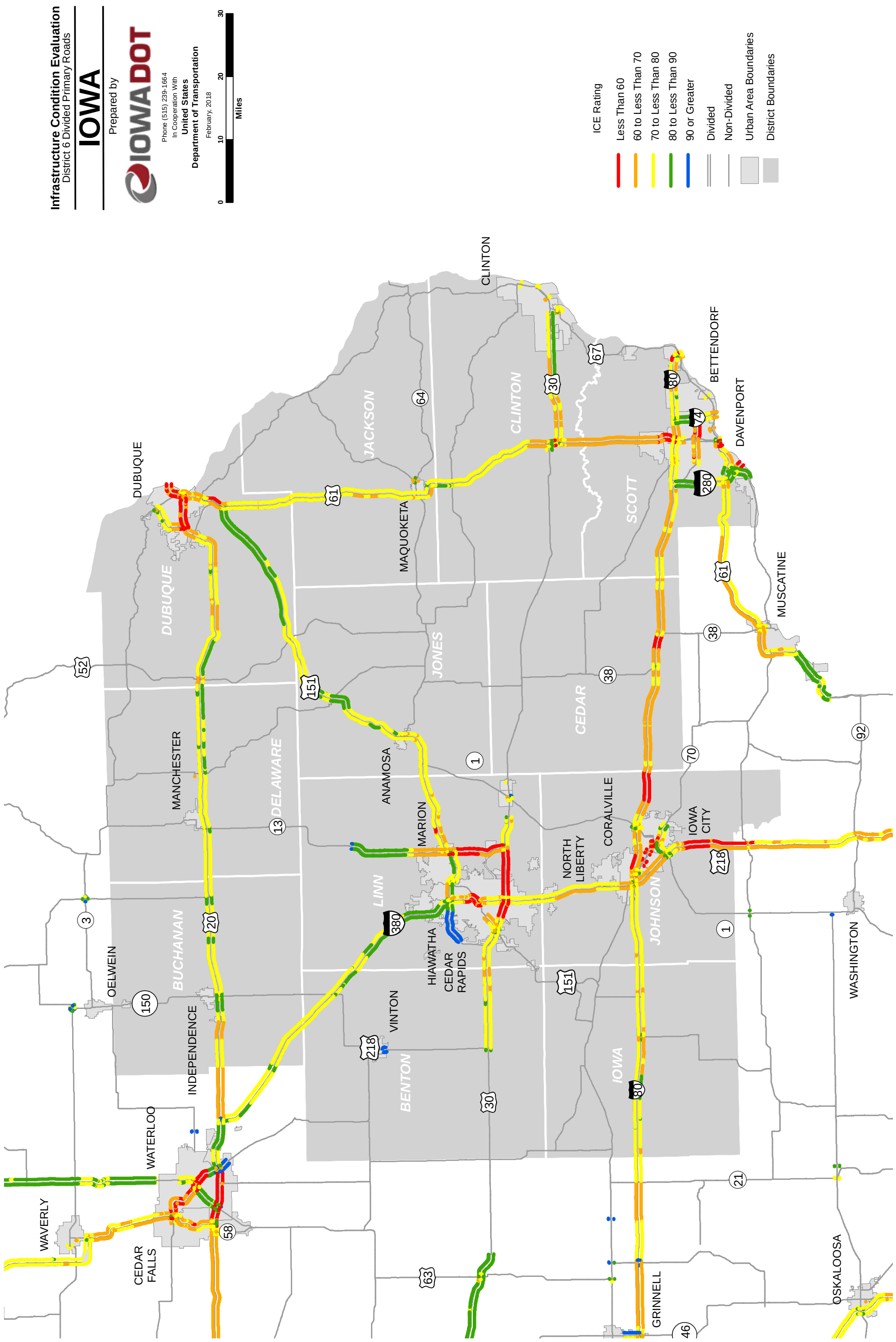


Figure 3.6: District 5 divided primary roads

Figure 3.7: District 6 divided primary roads



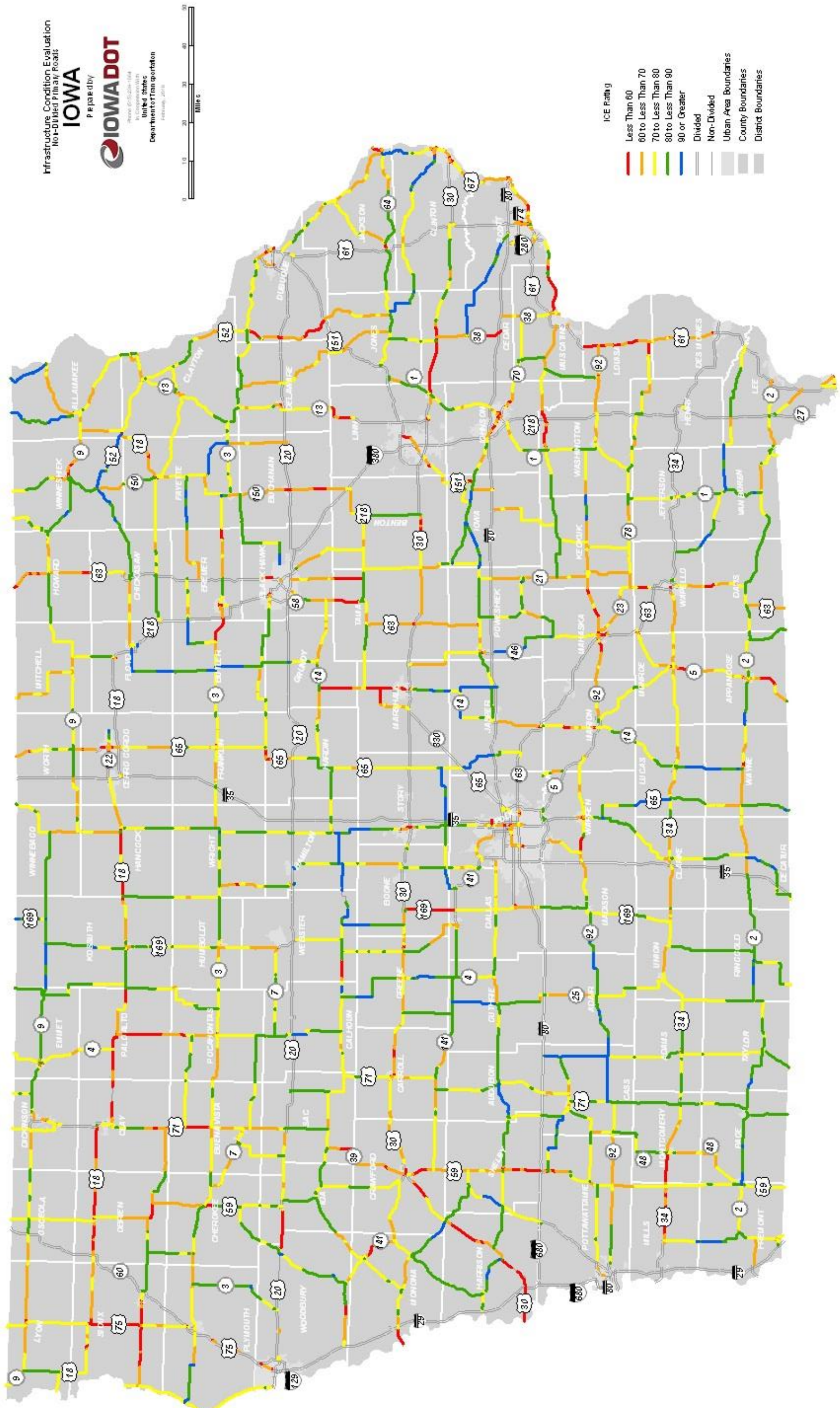


Figure 3.8: Statewide non-divided primary roads

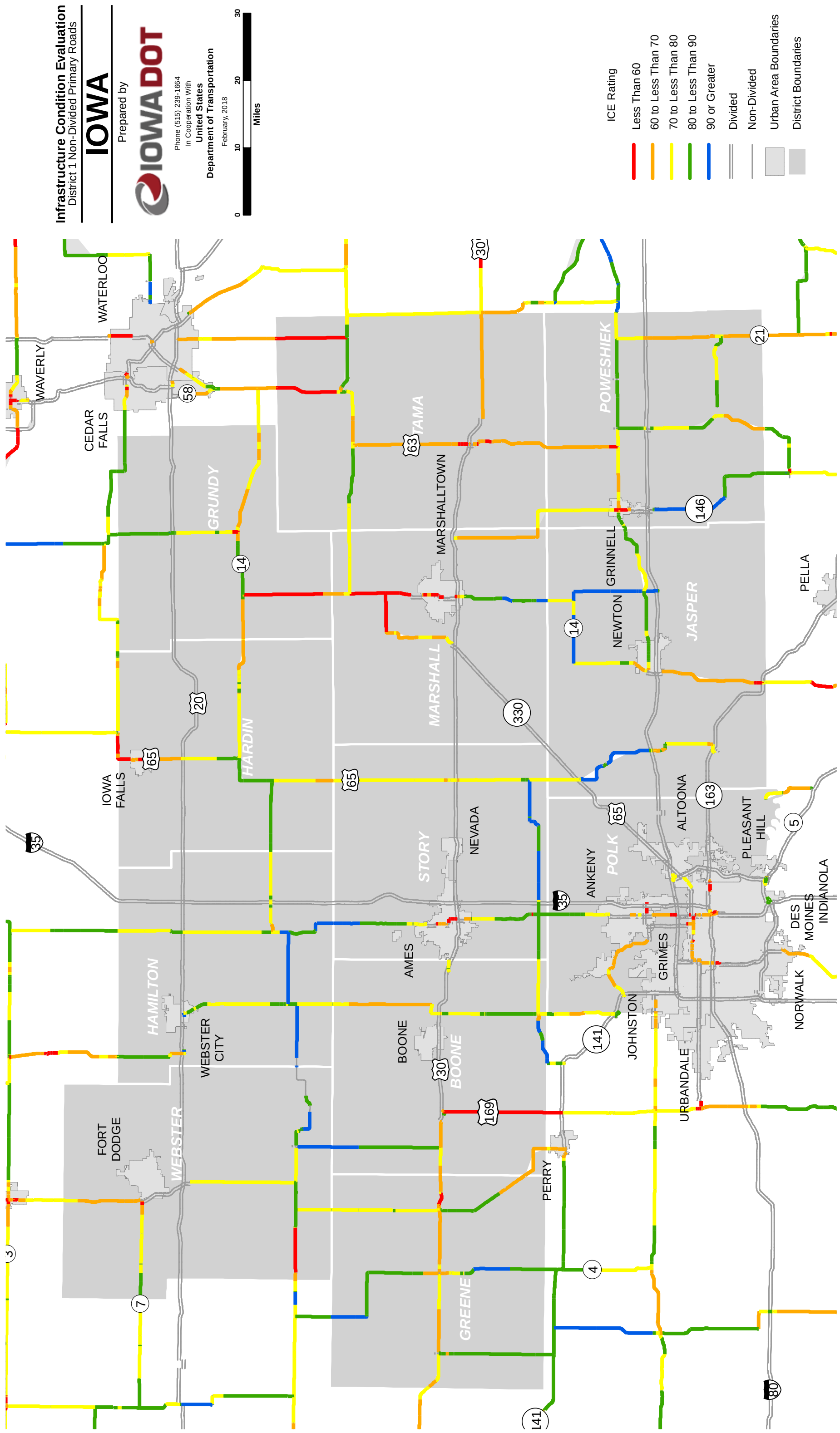


Figure 3.9: District 1 non-divided primary roads

Figure 3.10: District 2 non-divided primary roads

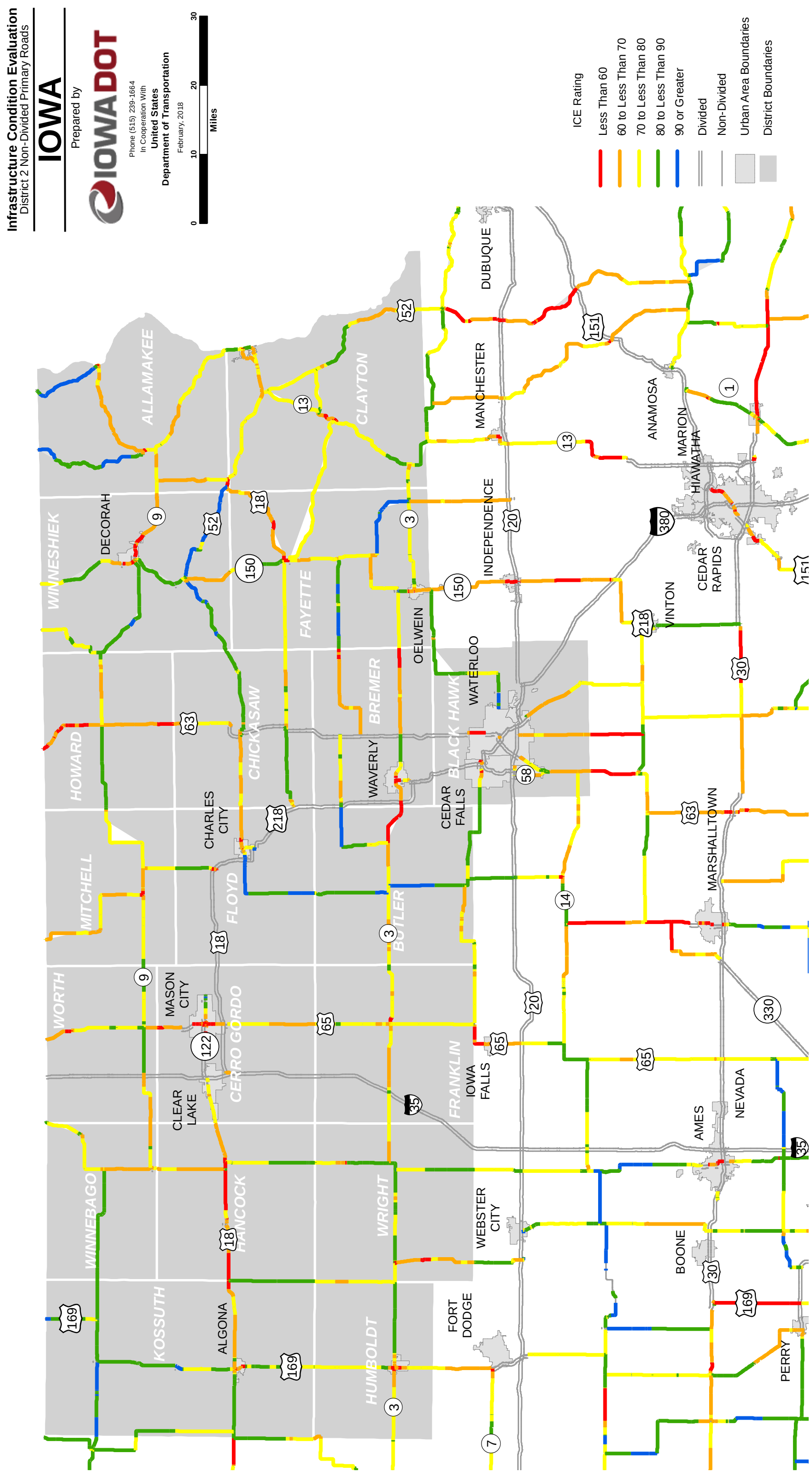


Figure 3.11: District 3 non-divided primary roads

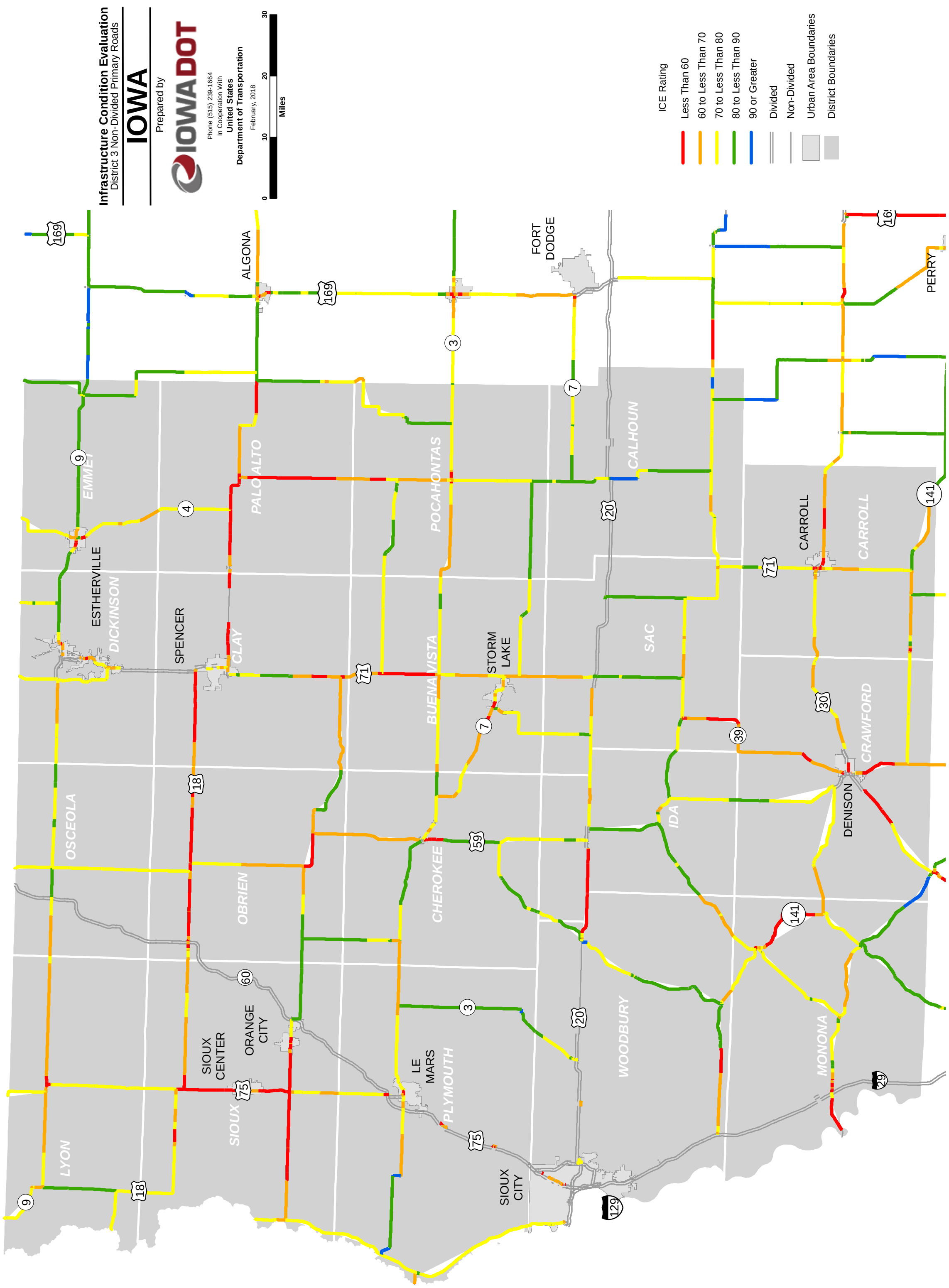
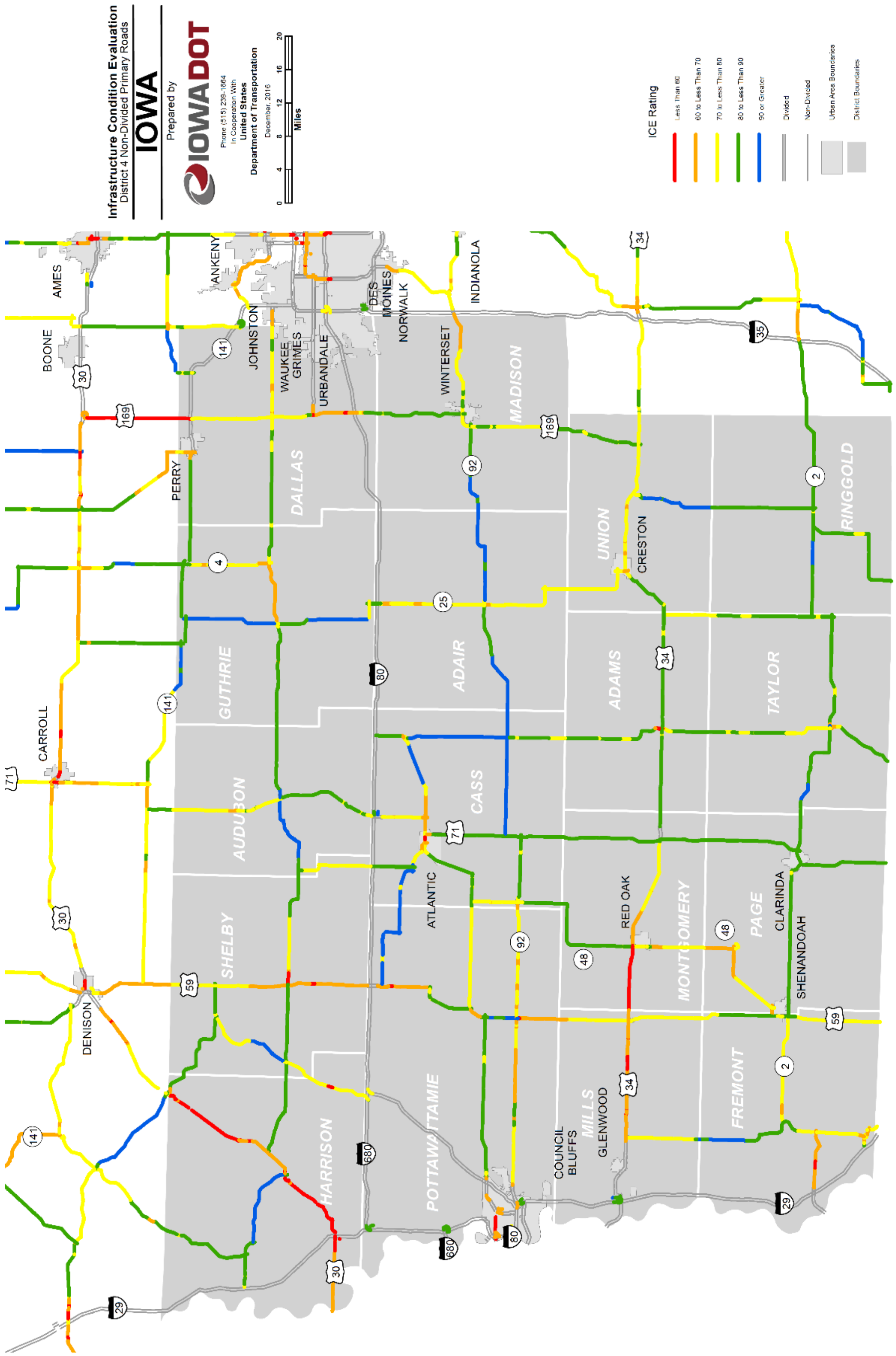


Figure 3.12: District 4 non-divided primary roads



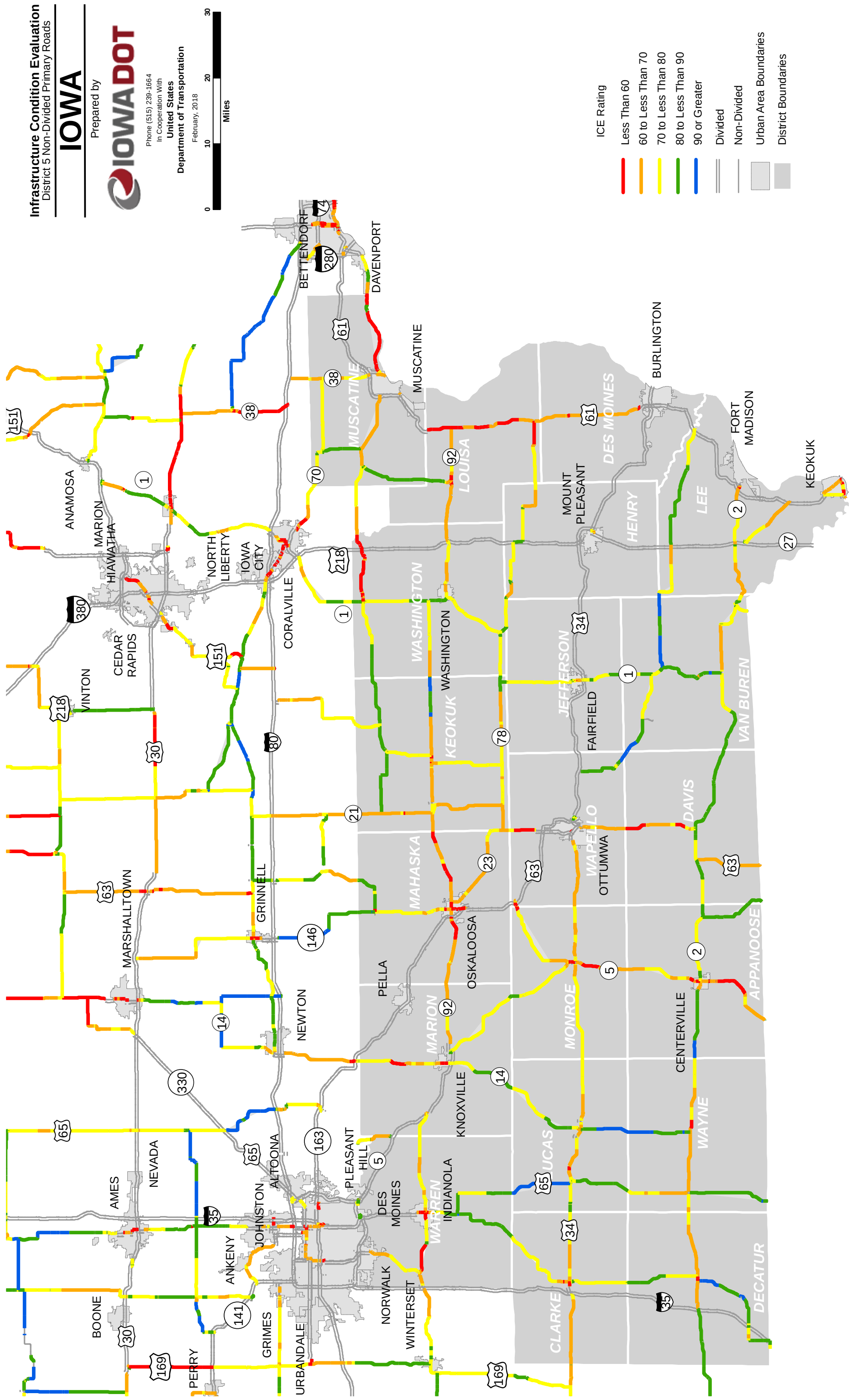


Figure 3.13: District 5 non-divided primary roads

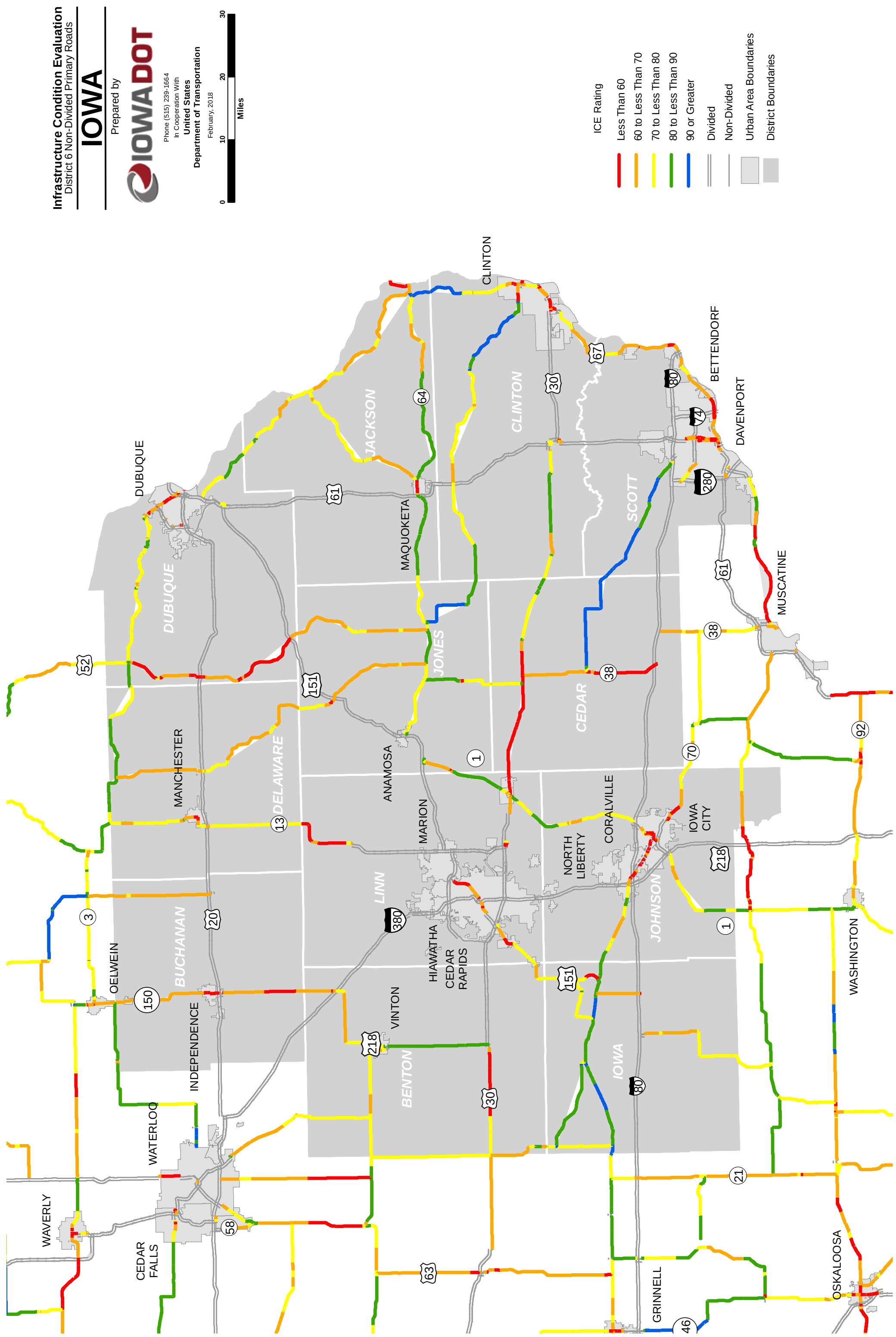


Figure 3.14: District 6 non-divided primary roads

4. System conditions and trends

This chapter offers a brief summary of Iowa's highway system and examines some of the key trends that have affected the system and are projected to have future impact. This information was evaluated using the ICE results from the four most recent years and is meant to offer trend analysis on system performance for the entire Primary Highway System.

4.1 System condition summary

The overall distribution of segment level ICE composite ratings in 2017 ranged from a low of 30 to a few segments that were rated 99, with the systemwide average at 74.99. The systemwide average across the different route types all experienced negative change apart from urban highways, which saw a slight increase. Segments that were located within urban areas continued to hold the lowest average ICE composite rating at just above 70 while the NHS system had an average ICE composite rating of 74. The NHS and urban highway system were both below the systemwide average while the rural highways, interstates, and non-NHS system were all rated above the systemwide average of 74.99. The non-NHS held the highest average ICE composite rating at 76.85. The recent drop in composite ratings can be attributed to the switch from the Federal Highway Administration (FHWA) Sufficiency rating to the DOT's Bridge Condition Index rating.[2] These averages can be seen in Table 4.1.

Table 4.1: Systemwide average ICE composite rating

	ICE Rating			
Route Type	**2014**	**2015**	**2016**	**2017**
Urban highways	69.92	71.33	71.24	71.30
Rural highways	76.32	77.32	78.40	75.55
NHS	74.06	75.105	75.00	74.05
Interstate	76.64	77.37	78.73	76.60
Non-NHS	78.08	78.43	78.57	76.85
Systemwide	**75.00**	**76.26**	**76.38**	**74.99**

[2] 2014 was the last year of the original analysis; In 2015, the analysis expanded to include the 5-year crate rate, see the safety factor in section 2.3; The current 2017 analysis utilizes the Iowa DOT's Office of Bridges and Structures Bridge Condition Index (BCI), which typically rates structures fifteen points below FHWA structure ratings, on average; which accounts for the decrease in average composite ratings from 2016 to 2017.

Condition by route type

Table 4.2 shows the distribution of the system by route type and the percentage of segmentation within each ICE composite rating cohort. The conditions of each route type are compared to each other to give some context on how each is performing.

Table 4.2: ICE composite rating cohort by route type

Systemwide by Route Type		<60	60-70	70-80	80-90	90+	
Route Type	**% of Total System**	**% by Route Type**	**% by Route Type**	**% by Route Type**	**% by Route Type**	**% by Route Type**	**Year**
Interstates	14%	**3%**	**19%**	**40%**	**36%**	**3%**	**2017**
		1%	9%	42%	43%	6%	2016
		3%	15%	38%	39%	5%	2015
		3%	17%	40%	39%	0%	2014
NHS	52%	**10%**	**24%**	**39%**	**25%**	**2%**	**2017**
		6%	19%	41%	31%	2%	2016
		7%	22%	41%	28%	3%	2015
		7%	27%	40%	25%	1%	2014
Non-divided	26%	**14%**	**29%**	**36%**	**19%**	**2%**	**2017**
		8%	24%	38%	26%	3%	2016
		10%	29%	37%	21%	3%	2015
		9%	36%	37%	17%	1%	2014
Divided	26%	**5%**	**18%**	**43%**	**32%**	**2%**	**2017**
		4%	14%	45%	36%	2%	2016
		3%	15%	45%	34%	3%	2015
		5%	18%	44%	33%	1%	2014
Non NHS	34%	**4%**	**21%**	**38%**	**31%**	**8%**	**2017**
		1%	13%	37%	35%	14%	2016
		2%	16%	39%	31%	12%	2015
		2%	15%	38%	35%	9%	2014
Non-divided	33%	**4%**	**21%**	**38%**	**31%**	**8%**	**2017**
		1%	13%	37%	35%	15%	2016
		2%	16%	39%	31%	12%	2015
		2%	15%	40%	37%	9%	2014
Divided	1%	**0%**	**10%**	**67%**	**15%**	**5%**	**2017**
		3%	16%	60%	16%	5%	2016
		0%	16%	57%	21%	6%	2015
		2%	13%	63%	19%	2%	2014
Totals	**100%**	**7%**	**22%**	**39%**	**29%**	**4%**	**2017**
		4%	16%	40%	34%	7%	2016
		4%	19%	40%	31%	6%	2015
		5%	21%	40%	31%	4%	2014

The system percentages by route type have remained relatively similar since 2014 with the exception of segments shifting into the 60-70 range, which has declined by five percent since 2014. This change has created a slight increase of three percent into the 80-90 range from the previous year.

Interstates

Table 4.3 shows the ICE composite ratings across the entire interstate system organized by route for 2014-2017. While I-480 continues to hold the lowest rating, it accounts for a small amount of mileage on the Interstate system with just under two miles. This route remains relatively unchanged since 2014 and maintained its 2016 score despite the shirt from FHWA Sufficiency rating to Iowa DOT Bridge Condition Index rating. I-129 has seen an increase in composite rating of just over five points over the 2016 rating. This route has not produced a score this high since 2014. However, all other routes have experienced a decline of greater than one point in since 2017, most likely due to the shift to BCI. I-29 continued to hold the highest average ICE composite rating. Overall, the routes that make up the interstate system have shown consistency during annual analysis, despite shifts in criterion.

Table 4.3: Interstate average ICE composite rating, weighted by segment length

	ICE Composite Rating			
Route	**2014**	**2015**	**2016**	**2017**
I-29	81.7	84.4	84.4	82.5
I-35	81.5	81.2	82.8	81.0
I-74	79.6	81.0	83.1	80.0
I-80	70.5	71.3	73.4	70.7
I-129	78.5	74.8	72.6	77.9
I-235	71.3	70.9	74.2	72.5
I-280	80.1	77.0	81.7	79.1
I-380	72.9	77.9	81.8	76.5
I-480	65.2	62.6	62.2	62.2
I-680	80.6	79.6	81.7	76.6

Condition by district

To compare the condition breakdown by district, Table 4.4 shows the average ICE rating for segments within each Iowa DOT district and the lowest-rated corridor. District 6 continues to hold the lowest average ICE composite rating with an average 72.65 in 2017, consistent with the 2016 score and shift in analysis. Overall, the average ICE ratings across each transportation district decreased from the previous year, but maintained consistency with the downward trend due to shifts in criterion.

Table 4.4: Districtwide average ICE rating

	ICE Composite Rating				
District	**2014**	**2015**	**2016**	**2017**	**Lowest Rated Corridor**
1	73.54	76.15	75.90	75.58	US 169 (jct of IA 141 to jct of US 30/US 169)*
2	74.75	76.63	75.64	75.52	US 20 (jct of IA 27 to jct of US 218)*
3	74.17	75.95	76.05	74.03	US 18 (jct of IA 60 to jct of US 71)
4	75.36	77.96	77.94	76.95	US 30 (Nebraska border to jct of US 30/I-29)
5	75.23	76.93	76.88	75.40	IA 22 (jct of IA 1 to jct of US 218)*
6	71.78	73.87	73.07	72.65	IA 136 (US 67 to Illinois border)*

*Represents unchanged corridors since the 2015-2016 report

In summary, the primary purpose of the ICE tool and this report is to offer an objective look at the system to help identify what areas may be worth additional consideration.

5. Conclusion

5.1 Periodic re-evaluation

As a planning tool, it is critical that the most recent data available be routinely incorporated into this report. As a result, the working group felt it was necessary to define a set schedule for a periodic reevaluation and update. Since the majority of the data used in the development of this report is updated on an annual basis, an annual update provides a logical time frame.

Input from the involved stakeholders over the past years is reflected in the analysis as well as the report itself. Moving forward, this process will continually seek input to facilitate the annual update and address any new stakeholder needs.

Annual schedule

The re-evaluation process also identified an approximate date when all relevant annual data updates should be expected to be completed. The planning team determined that, in a typical year, all new data could be expected to be available by July 1.[3] Table 5.1 builds from this date, and presents a timeline that ultimately defines when the primary outputs of this report (i.e., maps and corridor listings) would be updated and available for review.

Table 5.1: Annual re-evaluation and update timeline

Milestone	2018					2019
	August	September	October	November	December	January
Updated data available	■					
Linear overlay process		■	■			
Data processing			■			
Data analysis				■		
Web map update complete					■	
Planning report update			■	■	■	
Final report release						■

With an anticipated data analysis completion date in November, this information would be made available for each new programming cycle in an annual report initiated towards the end of the calendar

[3] Due to the shift in software used for analysis and a staffing turnover, the above timeline was not feasible. However, there should be consistency moving forward, reverting back to the typical analysis and production timeline.

year. In addition to providing another tool for facilitating programming discussions, the annual update cycle will continue to include trend analysis.

5.2 Future enhancements

Safety component

As mentioned in Section 2.1, *Data selection and significance*, incorporating a safety factor will be another priority enhancement consideration. With the completion of the segment level crash analysis by the Office of Traffic and Safety, the previous two years safety factor have served as a ‘value-added’ component outside the seven core criteria. The calculated normalization values as part of the safety analysis to compare corridors by a weighted crash rate which serves as an objective measurement.

Another application of a safety component could be adding the segment level crash data as the eighth core criteria which would directly influence the final ICE composite rating. However, future discussions with key stakeholders will be needed to decide if there is a need for adding safety factors into the core analysis and composite rating.

ITRAM data forecasting

With the development of the second generation iTRAM model completed, the idea of forecasting the ICE results has been discussed as a potential enhancement. To forecast the future traffic conditions, the ICE segmentation and data would be integrated into iTRAM, which would then be utilized to perform model runs to estimate the effects of AADT on the system in the forecast year.

This is also a possibility for measuring pavement condition data including PCI and IRI factors. To do so the Iowa DOT will need formulas to help estimate the deterioration of the pavement and structures under various scenarios.

Inclusion of the entire public roadway system

With the adoption of the Iowa DOT’s new LRS system, the new linear overlay process allows for a more streamlined approach to reporting the business data that makes up Iowa’s roadway network. By including the entire public roadway system, a more granular examination can provide beneficial data capabilities for MPO, RPA’s, and local jurisdictions.

Future ICE iterations will consider the addition of county and local roads within the standard dataset as stakeholder discussions will analyze if there are needs for an ICE analysis beyond the Primary Highway network.

Appendix 1

Figure A.1 ICE corridors

Route	Corridor Description	Counties	Corridor Length (Mi)	2015 Comp Rating	2016 Comp Rating	2017 Comp Rating	PCI	IRI	PASS	SU	COMBO	VC	BCI	SAFETY
I-29	I-29 (Missouri border to jct of IA 2)	Fremont	20.1	84.02	84.74	82.49	8	8	9	9	8	8	8	10
	I-29 (jct of IA 2 to jct of US 34)	Mills, Fremont	51.6	89.16	89.01	86.80	9	8	9	9	8	9	9	8
	I-29 (jct of US 34 to jct of I-80)	Mills, Pottawattamie	26.2	82.37	81.92	82.64	9	7	7	8	7	7	9	1
	I-29 (jct of I-80 to jct of I-480/US 6)	Pottawattamie	5.8	73.71	71.68	69.89	7	4	6	6	9	7	9	4
	I-29 (jct of I-480/US 6 to jct of IA-192)	Pottawattamie	5.8	77.49	76.60	74.32	7	4	8	7	9	8	9	7
	I-29 (jct of IA 192 to jct of I-680)	Pottawattamie	28.8	87.25	86.61	84.61	9	8	8	7	8	7	9	9
	I-29 (jct of I-680 to jct of IA 175)	Harrison, Monona	73.1	82.53	83.01	79.55	8	7	9	7	8	8	8	8
	I-29 (jct of IA 175 to jct of US 20/I-129)	Monona, Woodbury, Harrison, Pottawattamie	73.0	86.15	85.91	84.69	9	8	8	7	8	8	10	1
	I-29 (South Dakota border to jct of US 20/I-129)	Woodbury	14.6	75.04	73.20	75.81	8	6	6	6	8	7	9	1
I-35	I-35 (Missouri border to jct of US 34)	Decatur, Clarke	66.4	85.25	85.51	85.66	9	7	9	9	7	8	10	5
	I-35 (jct of US 34 to jct of IA 92)	Warren, Clarke	47.2	84.08	84.22	82.61	9	8	8	8	7	8	9	8
	I-35 (jct of IA 92 to jct of IA 5)	Warren, Polk	23.4	79.33	83.89	83.83	10	7	7	7	7	7	10	9
	I-35 (jct of IA 5 to jct of I-80/I-235)	Polk	9.6	72.90	76.84	75.97	9	6	1	4	7	4	10	4
	I-35 (jct of I-80/I-235 to jct of IA 160)	Polk	8.0	67.80	67.99	68.54	8	7	1	1	6	3	10	7
	I-35 (jct of IA 160 to jct of US 30)	Story, Polk	41.7	67.54	71.78	67.90	8	7	4	2	5	4	8	8
	I-35 (jct of US 30 to jct of US 20)	Hamilton, Story	61.4	78.14	80.89	78.88	9	7	7	6	7	7	9	2
	I-35 (jct of US 20 to jct of IA 3)	Franklin, Hamilton, Wright	47.0	84.12	87.30	83.67	9	8	8	7	8	8	9	5
	I-35 (IA 3 to US 18)	Cerro Gordo, Franklin	56.0	86.27	86.46	84.62	9	8	8	7	8	8	9	1
	I-35 (jct of US 18/IA 122 to Minnesota border)	Worth, Cerro Gordo	49.3	84.19	84.26	81.73	9	8	8	8	6	7	9	4
I-35/I-80	I-35/80 (W mixmaster to US 6)	Polk	4.3	70.14	68.01	69.51	9	6	2	2	6	2	9	4
	I-35/80 (jct of US 6 to jct of IA 141)	Polk	4.9	59.66	61.55	61.76	9	7	1	1	2	1	9	6
	I-35/80 (jct of IA 141 to jct of IA 28)	Polk	7.9	63.31	64.86	63.59	10	8	1	1	1	2	9	7
	I-35/80 (from jct of IA 28 to IA 415)	Polk	8.0	58.09	60.13	58.39	9	6	1	1	1	2	8	3
	I-35/I-80 (jct of IA 415 to jct of I-35)	Polk	4.1	60.30	62.81	63.28	9	6	1	1	2	4	9	1
I-74	I-74 (full route)	Scott	10.8	80.89	81.05	80.00	9	7	4	7	10	6	9	1
I-80	I-80 (Nebraska border to jct of I-29)	Pottawattamie	6.9	56.26	55.19	53.27	6	5	1	1	3	1	9	9
	I-80 (jct of I-29 to jct of US 6)	Pottawattamie	10.0	71.65	70.57	62.78	8	5	6	6	5	6	7	8
	I-80 (jct of US 6 to jct of US 59)	Pottawattamie	63.1	77.53	77.22	73.79	8	6	8	7	5	7	9	10
	I-80 (jct of US 59 to jct of US 71/US 6)	Cass, Pottawattamie	41.8	74.63	76.59	73.60	9	6	8	8	5	7	8	8
	I-80 (jct US 71/US 6 to jct of US 169)	Adair, Dallas, Cass, Madison	97.7	71.46	76.89	73.84	9	7	8	8	5	7	8	9
	I-80 (US 169 to W mixmaster)	Dallas, Polk	25.4	64.02	67.36	67.30	8	5	4	6	5	4	9	8
	I-80 (east jct of I-35/80 to jct of IA 14)	Polk, Jasper	53.4	69.41	71.37	70.25	9	6	6	5	4	5	9	1
	I-80 (jct of IA 14 to jct of US 63)	Jasper, Poweshiek	55.2	74.14	75.56	71.34	9	7	7	6	4	6	8	9
	I-80 (jct of US 63 to jct of US 151)	Iowa, Poweshiek	65.6	73.02	75.10	72.38	9	7	7	5	4	6	9	1
	I-80 (jct of US 151 to jct of I-380)	Johnson, Iowa	28.7	76.17	74.70	75.40	9	8	6	5	4	5	10	9
	I-80 (jct of I-380/US 218 to jct of IA 1)	Johnson	14.2	68.44	70.03	66.43	9	7	3	2	1	5	9	8
	I-80 (jct of IA 1 to jct of US 6)	Cedar, Johnson	49.2	67.92	70.89	65.32	9	7	6	5	1	5	8	9
	I-80 (jct of US 6 to jct of I-280)	Scott, Cedar	37.3	67.46	70.53	68.64	9	6	7	6	2	5	9	9
	I-80 (jct of I-280 to jct of I-74)	Scott	17.9	71.29	72.63	72.43	9	6	5	4	4	5	10	2
	I-80 (jct of I-74 to Illinois border)	Scott	17.9	74.12	74.55	72.37	9	7	6	6	5	6	8	10
I-129	I-129 (full route)	Woodbury	0.6	74.84	72.62	77.87	8	3	7	9	10	8	10	1
I-235	I-235 (jW Mixmaster to jct of IA 28)	Polk	8.6	73.27	76.34	74.15	9	8	1	1	9	1	9	10
	I-235 (jct of IA 28 to jct of US 69)	Polk	11.1	69.73	73.79	72.10	10	7	1	1	8	1	9	3
	I-235 (jct of US 69 to E Mixmaster)	Polk	9.5	69.90	72.95	71.40	9	6	1	1	8	4	9	1
I-280	I-280 (jct of US 61/IA 146 to jct of I-80)	Scott	14.4	77.77	79.42	81.25	9	7	8	7	7	8	9	7
	I-280 (Illinois border to jct of US 61/IA 146)	Scott	6.4	75.62	79.29	75.24	9	5	8	7	7	7	8	8
I-380	I-380 (jct of I-80 to jct of US 30)	Johnson, Linn	32.5	75.40	73.24	72.64	9	8	3	4	6	3	9	7
	I-380 (jct of US 30 to jct of IA 100)	Linn	15.6	67.48	69.62	67.32	8	6	1	3	7	4	8	8
	I-380 (jct of IA 100 to jct of IA 150)	Linn, Benton	39.3	80.39	81.26	80.76	9	7	6	7	8	7	9	2
	I-380 (jct of IA 150 to jct of US 20)	Black Hawk, Benton, Buchanan	44.3	79.48	79.81	77.13	8	4	8	8	8	8	9	10
	I-380 (jct of US 20 to start of US 218)	Black Hawk	14.7	82.95	82.36	82.35	9	8	6	6	8	7	9	10
I-480	I-480 (full route)	Pottawattamie	1.8	62.65	62.41	62.19	4	1	5	7	10	8	9	8
I-680	I-680 (Nebraska border to jct of I-29)	Pottawattamie	6.6	82.31	81.22	79.60	7	6	8	8	9	8	9	8
	I-680 (jct of I-29 to jct of I-80)	Pottawattamie	34.8	79.08	81.28	76.05	6	6	10	10	9	10	7	9
US 6	US 6 (jct of IA 192 to jct of I-80)	Pottawattamie	7.1	66.10	66.00	69.41	6	1	6	8	10	7	10	6
	US 6 (JCT OF I-80 TO US 59)	Pottawattamie	21.0	83.66	83.02	79.09	9	7	6	5	7	8	9	5
	US 6 (jct of US 59 to start of US 6 NHS near Atlantic)	Pottawattamie, Cass	24.8	78.02	77.61	76.25	7	5	8	7	9	9	9	7
	US 6 (jct of US 169 to jct I-35/80)	Dallas, Polk	24.2	75.92	76.15	75.47	8	6	4	5	10	5	10	8
	US 6 (jct of I-35/80 to jct of IA 28/US 6)	Polk	8.8	70.82	71.20	68.18	6	4	2	7	10	4	10	2
	US 6 (jct of IA 28 to jct of US 69)	Polk	6.1	66.42	65.02	64.97	6	3	1	1	10	5	10	7
	US 6 (jct of US 69 to jct of I-35)	Polk	2.6	63.77	63.70	69.32	6	5	4	2	8	5	10	5
	US 6 (jct of I-35 to jct of I-80)	Polk	8.8	73.75	74.98	79.07	8	6	6	7	10	7	10	8
	US 6 (JCT OF I-80 TO IA 146)	Jasper, Poweshiek	21.9	84.75	82.45	81.55	8	6	4	6	9	8	9	7
	US 6 (JCT OF IA 146 TO JCT OF US 151)	Iowa, Poweshiek	41.8	77.11	86.31	83.88	9	7	7	6	9	9	9	6
	US 6 (JCT OF US 151 TO JCT OF IA 965)	Iowa, Johnson	14.9	77.03	75.55	73.80	8	5	3	5	8	7	9	8
	US 6 (jct of IA 965 to jct of IA 1)	Johnson, Linn, Woodbury	6.0	64.38	65.79	59.67	5	1	1	1	9	4	10	6
	US 6 (jct of I-80 to jct of IA 70/US 6)	Johnson, Muscatine	20.2	71.80	73.45	71.49	8	5	1	1	6	7	10	8
	US 6 (jct of IA 70 to jct of IA 38)	Muscatine	11.6	82.38	80.45	74.66	8	6	8	4	7	9	8	7
	US 6 (jct of I-80 to jct of IA 38)	Cedar, Muscatine	5.5	66.98	72.39	65.32	8	6	6	4	4	8	7	7
	US 6 (jct of I-280 to jct of IA 461)	Scott	10.2	69.50	66.66	67.13	6	2	4	7	10	6	10	8
	US 6 (jct of IA 461 to jct of I-74)	Scott	5.6	61.08	62.04	60.01	5	1	1	7	10	2	9	3
US 18	US 18 (South Dakota state line to jct of US 75)	Sioux, Lyon	25.9	76.68	74.12	72.02	8	6	6	4	4	9	9	8
	US 18 (jct of US 75 to jct of IA 60)	Sioux, O'Brien	18.4	70.01	67.77	65.26	8	6	4	2	2	8	9	7
	US 18 (jct of IA 60 to jct of US 71)	O'Brien, Clay	33.5	63.75	64.21	55.21	6	5	6	4	2	9	6	6
	US 18 (jct of US 71/US 18 to jct of US 169)	Kossuth, Clay, Palo Alto	54.7	65.35	66.75	63.76	7	4	4	4	3	8	9	7
	US 18 (jct of US 169 to jct of I-35)	Hancock, Cerro Gordo, Kossuth	46.8	68.04	69.28	65.37	7	5	3	4	3	8	9	1
	US 18 (jct of I-35 to jct of US 65)	Cerro Gordo	16.1	72.26	73.82	70.41	8	5	8	8	1	8	9	2
	US 18 (jct of US 65 to jct of US 218/US 18)	Cerro Gordo, Floyd	64.0	72.24	71.94	70.27	8	6	7	7	1	7	9	5
	US 18 (jct of IA 14 to north jct of US 18/US 63)	Floyd, Chickasaw	20.1	70.04	70.82	66.31	6	4	6	7	7	9	8	8
	US 18 (jct of US 63 to jct of IA 150)	Chickasaw, Fayette	38.9	75.28	79.52	77.19	9	6	6	5	2	9	9	5
	US 18 (jct of IA 150 to jct of US 52/US 18)	Fayette, Allamakee, Clayton	16.6	65.15	64.51	63.33	5	2	7	5	5	9	9	8
	US 18 (jct of US 52 to jct of IA 76)	Clayton, Allamakee, Chickasaw	24.7	73.19	72.78	70.97	8	6	5	5	2	8	10	4
US 20	US 20 (JCT OF US 75 TO BEGINNING OF TWO-LANE NEAR MOVILLE)	Woodbury	43.1	73.94	74.48	76.40	7	5	8	8	7	9	10	7
	US 20 (JCT OF US 20/US 75 TO JCT OF I-29)	Woodbury	9.2	65.91	61.38	61.48	8	5	3	5	3	4	9	6
	US 20 (BEGINNING OF TWO-LANE NEAR MOVILLE TO JCT OF US 59)	Ida, Woodbury	24.4	66.45	65.82	65.13	7	4	6	5	1	9	8	4
	US 20 (jct of US 59 to jct of US 71)	Ida, Sac	21.0	73.20	77.34	74.26	9	7	7	5	1	9	10	2
	US 20 (jct of US 71 to jct of US 169)	Sac, Calhoun, Webster	103.1	87.85	85.82	84.35	9	8	9	9	5	9	9	6
	US 20 (jct of US 169 to jct of I-35)	Webster, Hamilton	63.1	75.34	74.27	73.02	8	6	8	7	3	8	9	5
	US 20 (jct of I-35 to jct of US 65)	Hamilton, Hardin	31.3	73.89	74.55	74.82	8	6	8	7	4	8	10	3
	US 20 (jct of US 65 to jct of IA 14)	Grundy, Hardin, Hamilton	53.7	72.19	72.17	73.37	8	6	8	7	3	8	10	6
	US 20 (jct of IA 14 to jct of IA 27)	Black Hawk, Grundy	33.4	65.65	65.86	65.33	8	6	6	2	1	7	9	8
	US 20 (jct of IA 27 to jct of US 218)	Black Hawk	14.5	57.05	56.16	55.80	8	5	2	1	1	3	9	1
	US 20 (jct of I 380 to jct of IA 150)	Buchanan, Black Hawk, Dubuque	32.3	70.77	71.03	68.49	8	4	7	6	4	7	9	3
	US 20 (jct of US 150 to jct of IA 13)	Buchanan, Delaware	41.7	83.49	81.57	78.92	9	8	8	6	4	8	9	6
	US 20 (jct of IA 13 to jct of IA 136)	Delaware, Dubuque	37.9	78.79	78.76	76.71	9	7	8	6	5	8	9	7
	US 20 (jct of IA 136 to jct of IA 32)	Dubuque	43.7	71.81	73.31	72.68	9	6	5	4	5	6	10	5
	US 20 (jct of IA 32 to jct of US 52/US 61)	Dubuque	8.3	57.20	53.85	54.61	7	3	1	2	4	1	9	4
US 30	US 30 (Nebraska border to jct of US 30/I-29)	Harrison	9.5	57.73	61.50	53.23	7	5	5	1	1	8	6	3
	US 30 (jct of I-29 to jct of US 59)	Harrison, Crawford	48.0	62.20	62.05	60.91	7	5	5	3	1	8	8	7
	US 30 (jct of US 59 to jct of US 71)	Crawford, Carroll	29.9	70.71	72.92	70.96	8	6	4	3	2	8	9	7
	US 30 (jct of US 71 to jct of US 169)	Greene, Boone, Carroll	41.6	67.56	68.23	67.17	8	7	4	3	3	8	8	7
	US 30 (JCT OF US 169 TO JCT OF IA 930)	Boone	36.3	79.87	78.78	78.34	8	6	7	7	8	7	10	1
	US 30 (jct of IA 930 to jct of I-35)	Story, Boone	17.4	79.38	76.23	74.38	10	7	3	3	7	4	9	5
	US 30 (jct of I-35 to jct of IA 14)	Marshall, Story	67.6	82.29	81.61	81.11	9	6	7	7	7	8	10	9
	US 30 (jct of IA 14 to beginning of two-lane near jct of US 63)	Tama, Marshall	42.0	82.06	81.77	81.24	8	7	7	8	7	8	10	4
	US 30 (beginning of two-lane near jct of US 63 to beginning of four-lane near jct of US 218)	Benton, Tama	25.3	68.64	69.85	64.42	9	7	4	1	1	7	8	8
	US 30 (JCT OF US 218 TO JCT OF IA 922)	Linn, Benton	30.6	75.38	78.00	76.85	9	6	7	7	5	7	9	4
	US 30 (jct of IA 922 to jct of I-380)	Linn	8.1	62.20	67.84	66.27	8	7	2	3	3	3	9	2
	US 30 (jct of I-380 to jct of to end of four-lane near Lisbon)	Linn	21.7	61.80	59.27	59.01	7	4	3	1	3	4	10	5
	US 30 (beginning of two-lane near jct of IA 1 to north jct of US30/US 61)	Linn, Cedar, Clinton	47.2	62.66	70.30	66.43	8	6	4	3	2	8	8	7
	US 30 (south jct of US 30/US 61 to Illinois state line)	Clinton	44.3	76.56	73.25	72.01	8	6	7	7	6	7	9	7

Route	Corridor Description	Counties	Corridor Length (Mi)	2015 Comp Rating	2016 Comp Rating	2017 Comp Rating	PCI	IRI	PASS	SU	COMBO	VC	BCI	SAFETY
US 34	US 34 (Nebraska border to jct of I-29)	Mills	8.5	91.19	91.17	88.68	9	8	8	7	8	9	10	6
	US 34 (jct of I-29 to beginning of two-lane near jct of US 275)	Mills	15.1	78.86	78.17	80.38	8	6	7	7	8	8	10	6
	US 34 (jct of US 275 to jct of US 59)	Mills	14.3	62.63	63.77	57.36	6	5	4	1	2	8	8	6
	US 34 (US 59 to jct of US 71)	Mills, Montgomery	23.2	69.04	66.89	61.85	6	5	6	4	4	8	8	8
	US 34 (jct of US 71 to IA 25)	Adams, Union, Montgomery	35.8	81.39	82.28	79.42	10	9	7	4	4	9	8	8
	US 34 (jct of IA 25 to jct of I-35)	Union, Clarke	31.2	76.72	74.72	69.45	9	8	5	3	3	8	7	4
	US 34 (jct of I-35 to jct of US 65)	Clarke, Lucas	17.8	78.50	78.94	73.06	8	7	5	4	3	9	9	1
	US 34 jct of US 65 to jct of IA 5)	Lucas, Monroe	36.5	76.16	74.22	71.08	8	6	7	6	3	9	9	4
	US 34 (jct of IA 5 to start of four-lane in at west Ottumwa city limits)	Monroe, Wapello	19.5	63.60	75.48	69.03	9	7	3	4	4	8	7	6
	US 34 (start of four-lane at west Ottumwa city limits to jct of US 63)	Wapello	10.1	72.54	71.01	70.62	7	3	6	7	8	7	9	6
	US 34 (jct of US 63 to jct of IA 1)	Wapello, Jefferson	48.3	79.39	80.92	79.08	9	6	8	7	6	8	9	4
	US 34 (jct of IA 1 to jct of US 218)	Henry, Jefferson	52.4	79.99	81.35	80.24	9	6	9	8	6	9	10	5
	US 34 (jct of US 218 to jct of US 61)	Henry, Des Moines	51.2	79.73	82.15	81.06	9	6	8	8	7	8	10	3
	US 34 (jct of US 61 to Illinois border)	Des Moines	4.8	65.34	80.11	79.03	10	7	6	8	5	6	9	5
US 52	US 52 (jct of IA 64 to jct of US 20)	Dubuque, Jackson	40.5	73.93	73.82	71.21	6	1	7	6	9	9	9	8
	US 52 (jct of US 151 to jct of US 20)	Dubuque	10.4	63.37	66.15	65.88	8	4	5	5	3	6	10	8
	US 52 (jct of IA 32 to jct of US 61)	Dubuque	4.2	73.93	60.95	60.36	6	2	1	1	6	6	10	4
	US 52 (jct of IA 136 to jct of IA 32)	Dubuque	22.8	76.54	76.96	74.57	7	5	7	7	8	9	9	9
	US 52 (n jct of US 52/US 61 to east jct of US 18/52)	Dubuque, Clayton	33.7	81.27	80.69	76.08	9	7	7	6	4	9	9	7
	US 52 (jct of IA 9 to jct of US 18)	Winneshiek, Allamakee	26.7	72.71	84.49	85.79	9	8	7	4	7	9	10	3
	US 52 (jct of IA 9 to Minnesota border)	Winneshiek	16.0	75.54	75.52	75.24	8	7	6	5	5	9	9	3
US 59	US 59 (Missouri border to jct of IA 2)	Fremont, Page	11.2	71.83	74.94	72.87	7	2	9	8	7	10	9	6
	US 59 (jct of IA 2 to jct of US 34)	Mills, Page, Fremont	20.3	73.19	80.85	76.58	8	6	8	7	8	10	8	8
	US 59 (jct of US 34 to jct of I-80)	Mills, Pottawattamie	34.9	74.03	74.33	69.27	7	3	8	6	7	9	8	8
	US 61 (jct of I-80 to jct of US 30)	Scott, Clinton, Dubuque	30.2	70.39	67.62	65.53	9	8	2	3	2	3	9	1
	US 59 (jct of US 30 to jct of US 20)	Ida, Crawford	39.2	79.05	83.78	80.39	9	7	7	6	5	9	8	5
	US 59 (jct of US 20 to jct of IA 3)	Ida, Cherokee	21.0	81.37	79.43	75.92	9	6	7	6	4	9	8	5
	US 59 (jct of IA 3 to jct of US 18)	Cherokee, O'Brien	32.7	69.54	66.98	63.18	5	2	8	7	5	9	9	3
	US 59 (jct of I-80 to jct of US 30)	Crawford, Shelby, Pottawattamie	36.7	67.45	67.85	62.52	7	6	5	5	2	8	8	5
	US 59 (jct of US 18 to Minnesota border)	O'Brien, Osceola	21.8	76.54	76.68	74.61	7	5	9	9	6	10	9	4
US 61	US 61 (Missouri border to jct of US 218)	Lee	15.5	80.43	79.48	79.81	8	7	8	7	8	8	10	8
	US 61 (jct of US 218 to jct of IA 2)	Lee	18.0	84.88	86.98	86.42	10	7	8	7	8	8	10	8
	US 61 (jct of IA 2 to end of four-lane at north Burlington city limits)	Lee, Des Moines	47.9	80.71	80.49	80.57	9	6	7	6	8	8	10	5
	US 61 (beginning of four-lane highway at Burlington to Louisa/Muscatine county line)	Louisa, Des Moines	34.8	68.41	65.03	62.21	7	6	3	3	1	7	9	3
	US 61 (Louisa/MUScatine county line to jct of I-280)	Scott, Muscatine, Louisa	29.1	74.88	75.12	74.63	8	5	7	6	5	7	10	7
	US 61 (jct of IA 38 to jct of I-280)	Muscatine, Scott	41.8	72.97	71.99	72.07	8	5	6	5	5	7	10	7
	US 61 (jct of US 30 to jct of IA 64)	Clinton, Jackson	38.5	74.91	75.90	74.78	8	6	7	6	4	8	9	5
	US 61 (jct of IA 64 to jct of US 151)	Jackson, Dubuque	49.8	77.86	75.56	74.94	7	5	8	7	6	8	10	4
	US 61 (jct of US 20/US 52 to Wisconsin border)	Dubuque	5.4	63.96	63.72	56.80	7	2	3	5	4	4	8	7
US 63	US 63 (Missouri border to west jct of US 34/US 63)	Wapello, Davis	34.1	76.64	74.43	66.41	8	7	4	4	4	8	7	7
	US 63 (jct of IA 149 to jct of US 34)	Wapello	14.4	79.18	80.63	79.12	9	6	9	6	5	9	9	3
	US 63 (jct of IA 149 to jct of IA 92)	Mahaska, Wapello	42.2	73.24	74.57	73.78	8	5	7	7	5	8	9	8
	US 63 (jct of I-80 to jct of US 30)	Poweshiek, Tama	22.9	70.38	72.96	69.25	7	3	7	4	6	9	9	6
	US 63 (jct of IA 163/US 63 to jct of I-80)	Mahaska, Poweshiek	33.5	67.58	63.50	63.26	6	2	4	1	9	5	10	3
	US 63 (jct of I-80 to jct of US 20)	Tama, Black Hawk	39.9	69.94	70.16	66.60	7	4	6	5	5	9	9	6
	US 63 (jct of US 20 to jct of US 218)	Black Hawk	8.2	80.26	80.00	80.19	7	6	8	7	9	9	10	4
	US 63 (jct of US 218 to north Waterloo city limits)	Black Hawk	7.4	66.31	64.28	66.65	6	1	1	3	6	8	10	1
	US 63 (at n Waterloo city limits to jct of IA 3)	Black Hawk, Bremer	21.4	82.12	82.43	81.16	9	6	8	8	7	8	10	3
	US 63 (jct of IA 3 to jct of US 18)	Chickasaw, Bremer, Black Hawk	36.6	83.24	83.52	83.64	8	7	9	9	7	9	10	1
	US 63 (jct of US 18 to Minnesota border)	Chickasaw, Howard	35.3	68.64	68.01	65.71	7	5	6	5	1	9	9	5
US 65	US 65 (Missouri border to east jct of US 34/US 65)	Wayne, Lucas	32.3	84.57	86.79	82.00	9	7	9	8	8	10	8	6
	US 65 (west jct of US 34/US 65 to beginning of non-divided near Indianola)	Warren, Lucas	26.7	73.73	87.72	84.71	10	8	6	6	7	9	9	1
	US 65 (from IndIAnola/IA 92 to jct of IA 5 and US 65)	Warren	19.6	80.39	78.19	78.81	9	7	4	5	9	5	10	1
	US 65 (jct of IA 5 to jct of IA 163)	Polk, Warren	17.8	64.77	72.21	67.56	9	6	3	1	4	4	9	6
	US 65 (jct of IA 163 to jct of I-80)	Polk	10.2	65.11	66.25	63.21	9	6	3	1	2	4	9	1
	US 65 (jct of I-80 to jct of IA 330)	Polk, Jasper	30.7	82.28	82.10	79.89	9	6	7	6	7	8	10	5
	US 65 (jct of US 65/IA 330 to jct of US 30)	Jasper, Story	13.6	80.08	76.85	76.21	7	5	8	7	7	9	10	1
	US 65 (jct of US 30 to jct of US 20)	Hardin, Story	32.9	79.39	79.04	76.31	7	6	8	7	6	9	10	8
	US 65 (jct of US 20 to jct of IA 3)	Franklin, Hardin	23.4	73.11	72.79	68.91	7	5	6	5	4	9	9	5
	US 65 (jct of IA 3 to jct of US 18)	Cerro Gordo, Franklin	25.3	75.23	76.40	72.04	8	5	5	6	7	9	8	6
	US 65 (jct of US 18 to beginning of four-lane highway on north side of Mason City)	Cerro Gordo	9.6	67.14	65.76	65.35	5	1	1	3	7	8	10	6
	US 65 (Mason City limits to Minnesota border)	Worth, Cerro Gordo	21.2	72.59	70.98	69.00	7	5	6	6	4	8	9	6
US 67	US 67 (jct of US 61/US 67 to jct of I-74)	Scott	6.8	67.79	62.48	63.34	6	1	4	5	10	5	9	8
	US 67 (jct of I-74 to jct of I-80)	Scott	10.6	64.69	63.44	62.21	7	4	1	1	4	7	10	8
	US 67 (jct of I-80 to jct of US 30)	Scott, Clinton	21.9	67.99	66.76	65.00	6	4	3	1	6	8	9	8
	US 67 (jct of US 30 to north Clinton city limits)	Clinton	5.7	68.85	68.88	68.27	6	2	1	4	9	8	10	8
	US 67 (Clinton north city limits to jct of US 52)	Jackson, Clinton	12.1	87.26	86.76	85.57	8	6	8	7	10	9	10	6
US 69	US 69 (Missouri border to jct of US 34)	Decatur, Clarke	40.7	85.21	83.36	81.86	7	6	8	8	10	10	9	8
	US 69 (jct of US 34 to jct of US 65)	Warren, Clarke	23.5	80.89	79.39	78.77	7	4	8	7	10	9	10	8
	US 69 (jct of IA 5 to jct of I-235)	Warren, Polk	14.4	70.07	68.65	67.86	7	3	1	5	10	4	9	7
	US 69 (jct of I-235 to jct of I-35/80)	Polk	5.9	67.58	63.50	63.26	6	2	4	1	9	5	10	3
	US 69 (jct of I-35/I-80 to north Ankeny corporate limit)	Polk	11.3	72.66	74.30	74.54	8	6	1	1	8	5	10	5
	US 69 (beginning of NHS on US 69 near Ankeny city limits to jct of US 30)	Story, Polk	16.4	63.08	79.38	78.23	9	6	1	4	9	6	9	1
	US 69 (jct of US 30 to end of NHS at north Ames city limits)	Story	6.8	69.80	68.03	67.67	6	3	1	1	10	6	10	6
	US 69 (Ames north City limits/US 69 NHS start to jct of US 20)	Hamilton, Story	26.7	84.57	85.62	85.14	9	7	6	8	9	9	10	6
	US 69 (jct of US 20 to jct of IA 3)	Wright, Hamilton	20.0	79.90	83.68	79.37	8	6	9	8	7	10	9	1
	US 69 (jct of IA 3 to jct of US 18)	Wright, Hancock	24.8	76.54	80.48	80.03	7	6	8	6	8	9	9	1
	US 69 (jct of US 18 to Minnesota border)	Hancock, Winnebago, Worth	33.0	73.01	74.82	70.42	6	5	7	7	8	9	9	4
US 71	US 71 (Missouri border to jct of US 34)	Page, Montgomery	29.5	84.68	84.55	82.87	9	7	7	6	7	9	9	7
	US 71 (jct of US 34 to jct of I-80)	Cass, Montgomery	39.3	80.84	81.81	81.48	9	7	8	7	6	9	9	8
	US 71 (jct of I-80 to beginning of two-lane near jct of US 30)	Carroll, Cass, Audubon	45.1	68.55	75.55	75.88	8	6	7	6	6	9	8	1
	US 71 (jct of US 30 to jct of US 20)	Carroll, Sac	31.0	68.82	74.22	78.68	8	6	7	6	6	9	10	6
	US 71 (jct of US 20 to jct of IA 3)	Buena Vista, Sac	20.0	72.08	71.53	69.90	7	5	6	6	4	9	10	8
	US 71 (jct of IA 3 to US 18)	Clay, Buena Vista	27.5	63.75	67.14	64.58	6	4	5	5	4	8	9	1
	US 71 (jct of US 18 to jct of IA 86/US 70)	Clay, Dickinson	19.9	88.04	85.75	84.34	9	7	7	7	9	8	10	5
	US 71 jct of IA 86 to Minnesota border)	Dickinson, Clay	20.8	72.21	73.50	73.76	8	5	1	3	7	7	10	8
US 75	US 75 (jct of US 20 to jct of IA 60/US 75)	Woodbury, Plymouth	52.2	72.06	69.62	67.24	8	6	6	6	3	6	9	5
	US 75 (jct of IA 60/US 75 to jct of US 18)	Sioux, Plymouth	25.9	69.29	66.75	65.99	8	6	3	2	1	8	10	8
	US 75 (jct of US 18 to Minnesota border)	Lyon, Sioux	21.2	79.41	76.80	74.74	8	7	7	7	4	9	9	4
US 77	US 77 (from Nebraska border to jct of I-29)	Woodbury	0.6	N/A	N/A	59.26	8	3	1	5	9	3	6	7
US 136	US 136 (jct of US 61 to jct of US 218)	Lee	2.5	64.14	63.77	62.78	6	2	6	1	4	9	10	5
US 141	US 141 (jct of US 59 to jct of I-29)	Crawford, Monona, Woodbury	53.0	71.56	73.10	68.71	6	4	8	8	7	9	8	5
US 151	US 151 (jct of I-80 to west jct of US 30/US 151)	Linn, Iowa, Benton	25.7	71.21	70.88	68.56	8	4	2	6	6	7	9	6
	US 151 (west jct of US 30/US 151 to jct of IA 100/IA 13)	Linn	16.9	63.96	63.72	56.80	7	2	3	5	4	4	8	7
	US 151 (jct of IA 100/IA 13 to jct of US 61)	Dubuque, Jones, Linn	114.9	79.75	77.82	77.14	8	6	7	7	6	8	10	1
US 169	US 169 (Missouri border to jct of US 34)	Ringgold, Union	40.2	86.23	87.14	83.40	8	7	9	8	9	10	9	8
	US 169 (jct of US 34 to jct of IA 92)	Madison, Union	23.6	81.04	79.30	77.30	7	5	8	7	9	9	9	1
	US 169 (jct of IA 92 to jct of I-80)	Madison, Dallas	13.7	65.41	85.43	81.68	10	8	3	4	9	8	8	5
	US 169 (jct of I-80 to east jct of IA 141)	Dallas, Boone	21.8	69.51	71.21	72.43	7	5	5	4	8	8	10	3
	US 169 (jct of IA 141 to jct of US 30/US 169)	Boone, Dallas	13.8	61.36	57.91	51.82	3	1	5	5	5	8	9	6
	US 169 (jct of US 30/US 169 to jct of US 20)	Webster, Boone	33.4	83.71	84.98	83.18	9	7	7	7	7	9	9	7
	US 169 (jct of US 20 to jct IA 3)	Webster, Humboldt	26.2	73.59	74.04	73.09	8	6	1	1	1	8	9	4
	US 169 (jct of IA 3 to jct of US 18)	Humboldt, Kossuth	24.7	84.31	79.59	76.50	9	8	5	5	4	9	9	8
	US 169 (jct of US 18 to Minnesota border)	Kossuth	35.6	84.40	87.63	84.44	9	8	8	8	7	10	9	5
US 218	US 218 (jct of US 61/US 218 to jct of IA 27/US 218)	Lee	13.7	73.44	69.04	66.75	7	2	2	4	6	8	9	7
	US 218 (jct of IA 27/US 218 to south jct of US 34/US 218)	Lee, Henry	49.2	75.99	75.08	73.99	8	6	8	8	3	8	9	7
	US 218 (jct of US 34 to jct of IA 92)	Henry, Washington	43.9	71.67	71.13	70.41	8	6	7	6	2	7	10	8
	US 218 (jct of IA 92 to jct of IA 1)	Johnson, Washington	48.9	68.94	68.59	67.20	9	5	5	6	2	6	9	6
	US 218 (jct of IA 1 to jct of I-80)	Johnson	10.8	63.90	63.27	63.00	9	8	1	1	1	1	10	5
	US 218 (jct of US 30 to jct of IA 150)	Benton	13.1	67.29	85.39	83.71	10	7	7	5	7	9	9	8
	US 218 (jct of IA 8 to US 218 outside Waterloo city limits)	Benton, Black Hawk	33.8	74.75	75.38	73.87	6	5	6	6	8	9	9	8
	US 218 (end of I-380 to jct of IA 27)	Black Hawk	15.5	61.20	60.88	59.04	7	4	2	2	3	6	9	1
	US 218 (jct of IA 57 to jct of IA 3)	Bremer, Black Hawk	33.0	70.71	69.12	69.33	8	6	5	6	3	6	10	6
	US 218 (jct of IA 3 to jct of US 18)	Floyd, Black Hawk, Bremer, Chickasaw	51.9	74.53	73.96	73.73	8	7	8	8	2	8	10	7

Route	Corridor Description	Counties	Corridor Length (Mi)	2015 Comp Rating	2016 Comp Rating	2017 Comp Rating	PCI	IRI	PASS	SU	COMBO	VC	BCI	SAFETY
	US 218 (jct of IA 9 to Minnesota border)	Floyd, Mitchell	36.4	73.05	73.90	72.09	7	7	8	6	5	9	9	8
US 275	US 275 (Missouri border to jct of US 34)	Fremont, Mills	35.4	81.60	80.45	80.40	7	5	8	8	9	10	10	5
	US 275 (Nebraska border to jct of I-29)	Pottawattamie	10.6	82.89	79.23	78.29	8	5	6	6	9	7	10	6
IA 1	IA 1 (jct of IA 2 to jct of US 34)	Jefferson, Van Buren	22.9	85.34	84.12	82.58	8	6	7	7	9	9	9	10
	IA 1 (jct of IA 92 to start of four-lane at S Iowa City city limits)	Washington, Johnson	28.2	79.08	82.41	78.02	10	8	4	1	7	8	8	9
	IA 1 (from start of four-lane at Iowa City limits to jct of US 6)	Johnson	4.6	65.94	81.93	81.73	10	8	3	4	9	4	10	8
	IA 1 (jct of US 6 to jct of I-80)	Johnson	5.6	68.86	64.41	62.60	5	1	6	7	10	5	9	8
	IA 1 (jct of I-80 to jct of US 30)	Linn, Johnson, Jones	18.5	78.68	78.41	77.61	9	7	1	2	7	6	9	9
	IA 1 (jct of US 30 to jct of US 151)	Linn, Jones	12.3	73.93	80.92	77.88	9	7	5	5	6	8	8	8
	IA 1 (jct of US 34 to jct of IA 92)	Jefferson, Washington, Keokuk	31.8	77.34	77.53	74.32	8	5	7	7	9	9	9	10
IA 2	IA 2 (Nebraska border to jct of I-29)	Fremont	6.3	71.85	71.54	74.95	9	5	8	8	4	8	9	3
	IA 2 (from jct of I-29 to jct of US 59)	Fremont	20.6	72.68	71.85	71.44	6	4	8	8	8	9	8	1
	IA 2 (jct of US 59 to jct of US 71)	Fremont, Page	18.8	75.11	85.42	86.56	10	8	6	7	8	9	9	3
	IA 2 (from jct of US 71 to jct of US 169)	Taylor, Page, Ringgold	43.9	86.86	86.06	85.60	8	7	9	8	9	10	9	5
	IA 2 (jct of US 169 to jct of I-35)	Decatur, Ringgold	20.5	90.15	87.81	86.01	9	8	9	7	8	10	9	7
	IA 2 (jct of I-35 to jct of US 65)	Decatur, Wayne	17.9	71.30	73.05	69.22	5	3	9	6	8	10	9	1
	IA 2 (jct of US 65 to jct of IA 5)	Jasper, Wayne, Appanoose	33.9	71.69	76.20	74.33	7	5	7	5	8	9	9	3
	IA 2 (jct of IA 5 to west jct of US 63)	Appanoose, Davis	19.7	83.06	81.43	78.72	7	7	8	7	7	9	9	3
	IA 2 (jct of US 63 to jct of US 218/IA 27)	Van Buren, Davis, Lee	51.2	81.67	81.11	77.58	7	6	8	8	8	10	8	5
	IA 2 (jct of US 218 to jct of US 61)	Lee	8.9	68.71	69.92	67.62	7	2	5	5	7	9	9	1
IA 3	IA 3 (from Nebraska border to jct of US 75)	Plymouth	26.1	82.09	81.68	78.73	8	5	9	8	8	10	8	3
	IA 3 (jct of US 75 to jct of US 59)	Cherokee, Plymouth	34.7	70.77	78.08	74.74	8	7	7	6	5	9	8	4
	IA 3 (jct of US 59 to jct of US 71)	Cherokee, Buena Vista	22.0	80.21	78.52	73.78	9	8	8	7	1	9	8	1
	IA 3 (jct of US 71 to jct of US 169)	Pocahontas, Humboldt, Buena Vista	47.7	72.76	77.20	71.05	8	7	8	7	3	9	8	3
	IA 3 (jct of US 169 to jct of I-35)	Wright, Franklin, Humboldt	43.3	65.67	80.13	79.47	8	7	7	6	5	9	9	4
	IA 3 (jct of I-35 to jct of US 65)	Franklin	9.9	71.41	71.29	69.51	6	4	6	5	7	9	10	6
	IA 3 (jct of US 65 to jct of US 218)	Franklin, Butler, Bremer	35.1	72.23	72.69	68.24	7	5	6	6	5	9	8	7
	IA 3 (jct of US 63 to jct of IA 150)	Bremer, Fayette	21.5	76.53	77.11	69.02	7	4	7	7	8	9	7	1
	IA 3 (jct of IA 150 to jct of IA 13)	Fayette, Clayton, Delaware	28.4	77.63	79.48	76.23	7	5	7	7	8	9	9	5
	IA 3 (jct of IA 13 to jct of IA 136)	Delaware, Dubuque	22.8	87.21	83.49	81.90	8	6	9	7	9	10	9	5
	IA 3 (jct of US 218 to jct of US 63)	Bremer	10.9	73.67	72.78	70.97	6	4	2	6	8	8	9	3
IA 4	IA 4 (jct of IA 44 to jct of IA 141)	Guthrie	10.2	71.27	70.34	78.60	5	8	8	5	9	9	10	8
	IA 4 (jct of IA 141 to juncton US 30)	Greene, Guthrie	13.8	85.57	85.22	84.58	9	7	7	8	8	9	9	5
	IA 4 (jct of US 30 to jct of US 20)	Calhoun, Greene	43.3	82.10	83.51	81.34	8	6	9	9	8	10	9	5
	IA 4 (jct of US 20 to jct of IA 3)	Calhoun, Pocahontas	19.8	71.93	78.92	78.65	9	7	8	7	4	9	10	5
	IA 4 (jct of IA 3 to US 18)	Palo Alto, Pocahontas	26.2	67.27	67.34	62.26	6	4	7	7	4	9	8	6
	IA 4 (jct of US 18 to IA 9)	Palo Alto, Emmet	20.1	73.06	75.58	70.65	6	5	8	8	7	9	8	7
	IA 4 (jct of IA 9 to Minnesota border)	Emmet	8.2	75.49	75.89	73.24	6	2	9	10	8	10	10	5
IA 5	IA 5 (Missouri border to jct of IA 2)	Appanoose	13.6	65.57	69.98	63.50	5	2	6	7	9	9	7	8
	IA 5 (jct of IA 2 to jct of US 34)	Monroe, Appanoose	20.5	67.93	69.45	66.99	6	5	4	4	6	8	9	3
	IA 5 (jct of US 34to jct of IA 92)	Monroe, Marion	26.7	78.39	78.24	75.33	7	7	6	5	7	9	9	7
	IA 5 (jct of IA 92 to jct of IA 14)	Marion	21.1	82.96	83.61	83.06	9	6	8	6	9	9	10	6
	IA 5 (jct of US 65/US 69 to jct of IA 92)	Polk, Marion, Warren	38.4	81.08	81.93	80.95	8	5	7	7	9	8	9	7
	IA 5 (jct of IA 28 to jct of US 69)	Warren, Polk	12.7	72.46	74.16	69.72	9	6	2	2	5	3	10	5
	IA 5 (jct of I-35 to jct of IA 28)	Polk	10.8	74.13	73.40	69.36	9	6	1	2	6	2	10	7
IA 7	IA 7 (jct of IA 3 to US 71)	Buena Vista, Cherokee	19.2	67.06	67.07	65.72	5	4	5	6	7	8	9	4
	IA 7 (jct of US 71 to jct of US 169)	Webster, Calhoun, Pocahontas, Buena Vista	47.9	79.58	80.84	78.20	8	6	8	7	6	9	9	5
IA 8	IA 8 (jct of US 63 to jct of US 218)	Benton, Tama	14.0	83.84	83.19	79.83	8	6	8	7	8	9	9	8
IA 9	IA 9 (from South Dakota border to jct of IA 60)	Lyon, Osceola	43.3	71.89	71.93	69.29	6	5	7	6	6	9	9	6
	IA 9 (jct of IA 60 to jct of US 71)	Osceola, Dickinson	32.7	80.13	81.69	77.72	8	6	5	6	6	9	9	3
	IA 9 (east jct of US 71 to west jct of US 169)	Kossuth, Emmet, Dickinson	40.2	85.69	86.43	85.53	9	7	7	8	7	9	10	8
	IA 9 (jct of US 169 to jct of I-35)	Winnebago, Worth, Kossuth	38.5	83.38	83.64	79.74	9	7	8	6	7	9	9	6
	IA 9 (jct of I-35 to jct of US 63)	Mitchell, Howard, Worth	54.1	76.34	80.76	77.53	8	6	8	6	8	9	9	8
	IA 9 (jct of US 63 to east Decorah city limit end of NHS)	Winneshiek, Howard	33.2	76.15	80.02	77.43	8	8	5	2	7	8	9	1
	IA 9 (end of IA 9 NHS to Illinois border/IA 26)	Allamakee, Winneshiek	32.7	70.56	70.45	68.55	6	3	6	6	7	8	9	4
IA 10	IA 10 (from Nebraska border to start of IA 10 NHS near Orange City)	Sioux	29.6	69.06	64.96	62.71	5	4	6	5	5	8	9	8
	IA 10 (from jct of IA 60 to jct of US 71)	Sioux, O'Brien, Clay	40.4	78.05	77.25	74.39	7	4	9	8	7	10	9	8
	IA 10 (jct of US 71 to jct of IA 4)	Buena Vista, Pocahontas	24.4	79.94	81.04	75.89	7	4	9	8	8	10	9	10
IA 12	IA 12 (jct of I-29 to jct of US 75/US 20)	Woodbury	10.7	74.83	73.87	72.01	7	3	5	7	10	6	8	8
	IA 12 (Sioux City limits to jct of IA 10)	Plymouth, Sioux	29.0	75.39	79.10	74.14	6	6	9	8	8	10	8	9
	IA 12 (jct of I-29 to end of NHS at north Sioux City limits)	Woodbury	5.5	69.15	70.35	72.22	7	5	5	6	8	9	8	8
IA 13	IA 13 (jct of US 151 to jct of E16 in Central City)	Linn	24.3	82.01	79.19	78.70	8	5	7	6	8	8	10	9
	IA 13 (start of four-lane in Central City to jct of US 20)	Linn, Delaware	19.5	71.94	70.28	65.88	8	6	4	4	3	8	8	5
	IA 13 (jct of US 20 to jct of IA 3)	Delaware	13.7	68.02	70.09	69.55	6	3	4	7	7	8	10	10
	IA 13 (jct of IA 3 to jct of US 52)	Clayton	26.3	76.18	76.32	73.61	8	6	7	5	6	9	9	8
IA 14	IA 14 (jct of IA 2 to jct of US 34)	Lucas, Wayne	17.3	69.26	90.35	88.73	10	7	7	8	9	9	9	8
	IA 14 (jct of US 34 to jct of IA 5)	Lucas, Marion	25.2	82.48	79.89	77.89	9	7	6	4	6	8	9	8
	IA 14 (jct of IA 5 to jct of IA 163)	Marion, Jasper	14.5	73.42	73.14	69.01	7	5	5	4	6	9	8	7
	IA 14 (jct of IA 163 to jct of I-80)	Jasper, Marion	13.0	71.94	67.78	64.02	6	4	5	5	5	9	9	5
	IA 14 (jct of I-80 to jct of US 30)	Jasper, Marshall	28.6	78.04	86.03	82.99	9	6	7	7	8	9	9	10
	IA 14 (jct of US 30 to jct of US 20)	Grundy, Marshall	41.6	67.84	68.46	65.60	7	5	3	5	4	8	9	9
	IA 14 (jct of US 20 to jct of IA 3)	Butler, Grundy	20.4	89.75	89.71	88.41	9	7	8	8	9	9	9	7
	IA 14 (jct of IA 3 to jct of US 18 in Charles City)	Floyd, Butler	29.0	90.88	90.69	87.80	10	8	8	7	9	9	9	9
IA 15	IA 15 (jct of US 20 to jct of US 18)	Pocahontas, Humboldt, Kossuth	29.4	79.53	79.82	77.99	7	4	9	8	8	10	9	2
	IA 15 (jct of US 18 to Minnesota border)	Kossuth, Emmet	33.1	83.33	85.92	81.67	8	5	9	9	9	10	9	1
IA 16	IA 16 (jct of US 218/IA 27 to jct of US 61)	Lee	19.7	82.00	82.09	81.25	7	7	9	4	9	9	10	7
	IA 16 (jct of US 34 to jct of US 218)	Van Buren, Lee, Wapello, Davis	43.6	82.79	83.59	81.96	8	5	9	7	9	10	9	1
IA 17	IA 17 (jct of IA 141 to jct of US 30)	Dallas, Polk, Boone	20.5	81.31	80.04	78.59	9	7	3	5	7	7	9	9
	IA 17 (jct of US 30 to jct of US 20)	Hamilton, Boone	31.1	75.79	75.81	74.58	7	5	7	7	7	9	9	4
	IA 17 (jct of US 20 to jct of IA 3)	Hamilton, Wright	20.8	71.17	73.78	71.20	7	4	8	7	4	9	9	1
	IA 17 (jct of IA 3 to jct of US 18)	Wright, Hancock	25.2	79.26	79.57	75.96	7	5	9	9	6	10	9	1
IA 21	IA 21 (jct of IA 78 to jct of IA 92)	Keokuk	12.4	67.11	67.22	65.39	4	1	9	9	9	10	9	5
	IA 21 (jct of IA 92 to jct of I-80)	Keokuk, Poweshiek	24.9	70.17	71.82	65.35	6	4	8	8	6	9	8	6
	IA 21 (jct of I-80 to jct of US 30)	Iowa, Benton, Poweshiek	19.4	79.90	75.02	71.87	6	4	8	7	8	9	9	5
	IA 21 (jct of US 30 to Waterloo city limits)	Tama, Benton, Black Hawk	33.9	72.13	72.66	67.28	5	4	8	7	8	9	8	5
IA 22	IA 22 (jct of IA 21 to jct of IA 1)	Keokuk, Washington	34.9	82.57	80.32	80.25	6	5	9	8	9	10	10	6
	IA 22 (jct of IA 1 to jct of US 218)	Washington	8.9	57.43	62.97	53.59	7	2	2	2	6	7	6	2
	IA 22 (east jct of US 218 to jct of IA 70)	Muscatine, Johnson, Washington	16.0	65.61	69.54	66.42	8	5	6	6	2	8	9	5
	IA 22 (east jct of IA 70 to jct of US 61)	Muscatine	9.4	71.85	69.32	64.13	8	4	5	6	3	8	8	7
	IA 22 (jct of IA 22/IA 38 in Muscatine to Buffalo city limits)	Muscatine, Scott	19.8	66.59	67.27	64.27	4	2	7	6	8	9	9	7
	IA 22 (start of four lane in Buffalo to jct of IA 461)	Scott	6.1	73.43	84.78	84.78	9	7	9	5	8	8	10	7
IA 23	IA 23 (jct of IA 149 to jct of IA 92)	Mahaska, Keokuk	16.0	69.68	70.97	65.99	5	4	7	7	8	9	8	5
IA 24	IA 24 (jct of US 63 to jct of US 52/IA 150)	Winneshiek, Chickasaw	27.5	83.83	85.71	83.25	9	7	7	6	7	9	9	8
IA 25	IA 25 (jct of IA 2 to jct of US 34)	Union, Ringgold	18.4	78.86	80.17	77.58	7	3	9	8	9	10	9	8
	IA 25 (jct of US 34 to jct of I-80)	Union, Adair	34.9	76.85	76.31	74.00	6	6	8	6	8	9	9	7
	IA 25 (jct of I-80 to jct of US 30)	Greene, Guthrie, Adair	42.6	89.07	88.43	84.90	9	7	9	8	8	10	9	6
IA 26	IA 26 (jct of IA 9 to Wisconsin border)	Allamakee	11.3	91.36	91.29	89.57	9	7	9	8	10	10	9	1
IA 27	IA 27 (Missouri border to jct of IA 27/US 218)	Lee	22.3	76.77	78.24	77.67	9	6	9	8	4	9	9	8
	IA 27 (jct of I-80 to jct of US 218/IA 57)	Black Hawk	13.2	69.37	69.08	70.07	8	4	4	6	7	5	9	4
IA 28	IA 28 (jct of IA 92 to south Norwalk city limits)	Warren	7.4	78.26	76.41	74.69	6	5	5	4	9	8	10	1
	IA 28 (start of NHS at south Norwalk city limits to jct of IA 5)	Warren, Polk	6.2	70.38	71.42	67.88	6	3	5	6	10	6	10	7
	IA 28 (jct of IA 5 to jct of I-235)	Polk	11.3	73.58	75.91	74.93	8	4	3	5	10	5	10	4
	IA 28 (jct of I-235 to jct of US 6)	Polk	1.7	63.14	67.58	67.18	7	2	1	1	10	4	10	1
	IA 28 (jct of US 6 to jct of I-35/80)	Polk	3.2	76.62	73.93	73.48	8	5	1	5	10	3	10	3
IA 31	IA 31 (jct of IA 141 to jct of US 20)	Woodbury	20.4	82.64	84.38	80.10	7	5	9	9	9	10	9	7
	IA 31 (jct of US 20 to jct of US 59)	Woodbury, Ida, Cherokee	17.9	81.03	82.81	79.73	8	5	9	8	8	10	9	7
IA 32	IA 32 (jct of US 20 to jct of US 52)	Dubuque	10.2	73.34	72.53	71.99	7	3	5	5	10	6	10	1
IA 37	IA 37 (jct of US 30 to jct of US 59)	Shelby, Harrison	16.9	84.22	85.45	81.82	8	5	9	9	9	10	8	8
	IA 37 (jct of IA 175 to jct of US 30)	Monona, Harrison, Crawford	23.1	83.81	86.08	80.31	8	6	10	9	9	10	8	8
IA 38	IA 38 (jct of US 20 to jct of IA 3)	Delaware	11.6	69.75	67.18	63.76	3	1	9	8	10	10	8	3
	IA 38 (jct of US 151 to jct of IA 3)	Jones, Delaware	22.4	69.27	70.42	68.21	6	2	8	6	8	9	9	4
	IA 38 (jct US 30 to jct of US 151)	Cedar, Jones	25.7	75.29	75.29	71.47	6	4	9	7	8	10	8	8
	IA 38 (jct of I-80 to jct of US 30)	Cedar	18.1	66.14	66.48	62.22	5	3	6	5	6	8	8	2

Route	Corridor Description	Counties	Corridor Length (Mi)	2015 Comp Rating	2016 Comp Rating	2017 Comp Rating	PCI	IRI	PASS	SU	COMBO	VC	BCI	SAFETY
	IA 38 (jct of US 61 to jct of US 6)	Muscatine	8.1	76.38	73.97	70.78	8	7	2	3	4	8	9	8
	IA 38 (Illinois border to jct of IA 22)	Muscatine	3.1	69.89	69.05	68.75	6	4	1	2	8	7	9	8
IA 39	IA 39 (jct of IA 175 to near jct of US 30 / US 59)	Crawford, Sac	24.5	67.81	70.48	63.83	6	5	8	6	2	9	9	8
IA 44	IA 44 (jct of US 30 to jct of US 59)	Harrison, Shelby	20.9	83.36	83.06	80.81	7	7	9	8	10	10	8	5
	IA 44 (jct of US 59 to jct of US 71)	Audubon, Shelby	24.3	83.86	82.79	84.15	8	6	8	8	9	9	10	6
	IA 44 (jct of US 71 to jct of US 169)	Guthrie, Audubon, Dallas	46.6	81.78	81.19	77.86	8	6	7	7	9	9	8	7
	IA 44 (jct of US 169 to jct of IA 141)	Dallas, Polk	14.0	72.02	73.26	71.10	7	5	1	1	8	6	10	9
IA 48	IA 48 (jct of US 59 to jct of US 34)	Montgomery, Cass	24.8	83.73	82.27	79.75	7	6	8	8	9	10	9	7
	IA 48 (jct of US 34 to jct of US 6)	Page, Montgomery	23.4	72.95	71.41	69.76	5	3	7	7	9	9	9	5
IA 51	IA 51 (jct of US 18 to jct of IA 9)	Allamakee	10.9	74.88	76.22	68.12	7	6	8	6	6	9	7	8
IA 56	IA 56 (jct of IA 150 to jct of IA 13)	Fayette, Clayton	24.5	77.83	77.34	74.19	6	2	10	9	9	10	9	8
IA 57	IA 57 (jct of US 65 to Cedar Falls city limits)	Butler, Black Hawk, Grundy, Hardin	38.7	79.99	79.66	77.08	7	5	7	7	9	9	9	8
	IA 57 (start of NHS at west Waterloo city limits to jct of US 218/IA 27)	Black Hawk	5.2	72.73	72.74	70.37	7	4	1	1	6	6	9	8
IA 58	IA 58 (jct of US 63 to jct of US 20)	Black Hawk	6.7	75.28	75.29	73.29	6	3	5	8	9	9	10	5
IA 60	IA 60 (jct of US 75 to jct of US 18)	Plymouth, O'Brien, Sioux	70.0	83.97	82.88	81.23	9	7	9	9	6	9	9	2
	IA 60 (jct of US 18 to Minnesota border)	O'Brien, Osceola	48.1	86.82	85.30	83.42	9	7	9	9	6	9	9	8
IA 62	IA 62 (jct of US 52 to Maquoketa city limits)	Jackson	19.7	69.59	80.31	73.35	7	4	8	8	10	9	7	8
IA 64	IA 64 (jct of US 61 to Illinois border)	Jackson	31.1	76.98	75.99	73.99	6	3	8	7	9	9	9	5
	IA 64 (jct of US 151 to start of NHS on IA 64 near US 61 jct)	Jones, Jackson	33.1	82.77	81.41	80.06	8	7	7	6	8	9	10	8
IA 70	IA 70 (jct of IA 92 to jct of IA 22)	Muscatine, Louisa	14.8	81.22	83.90	83.60	7	6	8	8	9	9	10	8
	IA 70 (east jct of IA 22 to jct of US 6)	Muscatine	6.3	89.76	87.02	84.34	9	8	6	6	8	9	9	4
IA 76	IA 76 (jct of US 18 in McGregor to jct of IA 9)	Allamakee, Clayton	42.7	82.91	82.45	80.16	8	6	8	6	8	9	9	4
	IA 76 (jct of IA 9 to Minnesota border)	Clayton	4.3	75.89	76.02	74.66	6	2	7	8	10	9	10	6
IA 78	IA 78 (jct of US 218 to jct of US 61)	Henry, Louisa	20.6	71.78	74.32	68.30	6	2	9	9	8	10	7	7
	IA 78 (jct of IA 149 to jct of IA 1)	Keokuk	13.0	74.13	79.18	70.98	7	7	8	7	7	9	7	2
	IA 78 (jct of IA 1 to jct of US 218)	Jefferson, Henry, Washington	17.4	80.72	78.67	77.04	6	5	9	9	8	10	9	7
IA 81	IA 81 (full route)	Van Buren	2.2	76.50	75.90	73.50	5	3	9	9	10	10	9	7
IA 83	IA 83 (jct of US 59 to jct of IA 148)	Cass, Pottawattamie	30.6	82.40	84.99	83.88	8	6	8	8	10	9	9	7
IA 85	IA 85 (jct of US 63 to jct of IA 21)	Poweshiek	8.4	88.74	90.20	81.83	9	7	9	8	9	10	7	5
IA 86	IA 86 (jct of US 71 to jct of IA 9)	Dickinson	7.7	72.32	71.50	71.23	7	4	5	5	6	8	10	7
	IA 86 (jct of IA 9 to Minnesota border)	Dickinson	4.9	84.96	83.47	78.47	9	6	7	7	4	9	10	3
IA 92	IA 92 (jct of I-29 to jct of US 59)	Pottawattamie	25.4	71.67	71.52	70.97	7	5	3	5	6	8	8	6
	IA 92 (jct of US 59 to jct of US 71)	Cass, Pottawattamie	22.1	76.09	76.12	70.37	6	4	9	8	9	10	7	5
	IA 92 (jct of US 71 to jct of US 169)	Adair, Cass, Madison	51.2	82.19	90.01	88.41	10	8	8	7	9	10	9	7
	IA 92 (jct of US 169 to jct of I-35)	Warren, Madison	12.8	76.27	71.57	71.51	6	5	6	1	8	9	10	4
	IA 92 (jct of I-35 to jct of US 69/US 65)	Marion, Warren	12.0	69.34	72.32	66.85	7	4	3	1	9	8	8	6
	IA 92 (jct of US 69 to jct of IA 5)	Warren, Marion	16.0	70.64	69.55	70.48	5	4	6	6	8	9	10	1
	IA 92 (jct of IA 5 to jct of IA 163)	Marion, Mahaska	25.3	70.69	71.34	67.99	6	5	6	4	5	9	9	4
	IA 92 (jct of US 63 to jct of IA1)	Marion, Keokuk, Mahaska,Washington	49.5	69.99	72.18	68.03	6	3	7	6	6	9	8	5
	IA 92 (south jct of IA 1 to jct of US 61)	Louisa, Washington	17.6	69.48	68.89	64.89	7	7	6	5	1	9	9	6
	IA 92 (jct of IA 1 to jct of US 218)	Washington	9.5	70.58	71.98	69.25	8	4	2	5	6	8	9	8
IA 93	IA 93 (jct of US 63 to jct of IA 150)	Bremer, Fayette	29.7	77.24	77.38	74.85	6	4	8	8	9	10	9	5
IA 96	IA 96 (jct of IA 14 to jct of US 63)	Tama, Marshall	16.6	81.17	81.96	80.02	7	6	9	8	8	10	9	6
IA 100	IA 100 (jct of I-380 to jct of US 151)	Linn	13.8	74.36	78.38	76.97	9	5	2	6	10	4	10	5
	IA 100 (1.4 mi W of I-380 to I-380)	Linn	2.2	85.52	82.65	84.28	9	8	2	7	10	4	10	9
	IA 100 (End of Route to 1.4 mi W of I-380)	Sac	8.2	N/A	N/A	91.09	10	8	7	9	10	6	10	7
IA 110	IA 110 (jct of US 20 to end of IA 110 NHS)	Buena Vista, Sac	14.8	76.56	78.15	76.72	6	4	8	7	9	9	10	8
IA 116	IA 116 (jct of US 218 to jct of IA 3)	Bremer	3.8	65.98	67.07	68.72	6	3	1	1	8	5	10	8
IA 117	IA 117 (ct of IA 163 to jct of I-80)	Jasper	8.3	76.51	74.64	73.23	7	4	7	8	8	9	9	8
	IA 117 (jct of I-80 to jct of US 65)	Jasper	10.2	93.31	93.86	93.10	10	8	9	9	9	10	10	10
IA 122	IA 122 (jct of I-35 to W Mason City city limits)	Cerro Gordo	9.5	76.73	76.72	75.01	7	5	5	6	9	6	10	7
	IA 122 (W Mason City limits to east Mason City limits)	Cerro Gordo	11.8	73.81	72.90	71.44	6	3	1	4	9	6	10	8
IA 127	IA 127 (jct of I-29 to jct of US 30)	Harrison	16.0	88.41	88.09	84.82	8	6	9	9	10	10	9	8
IA 128	IA 128 (jct of IA 13 to jct of US 52)	Clayton	7.0	79.40	79.71	76.24	7	4	8	6	9	10	9	8
IA 130	IA 130 (jct of I-80 to jct of IA 38/IA130)	Scott, Cedar	32.6	92.30	90.96	90.14	9	8	8	7	9	10	9	6
IA 136	IA 136 (jct of US 20 to jct of IA 3/US 52)	Dubuque	10.1	62.23	61.67	58.53	5	3	4	2	6	8	9	1
	IA 136 (jct of US 151 to jct of US 20)	Dubuque	14.1	59.59	62.01	56.54	4	2	7	4	6	9	8	1
	IA 136 (jct of US 61 to jct of US 151)	Clinton, Jones, Dubuque	42.4	78.02	78.78	75.54	6	4	9	8	9	10	8	1
	IA 136 (jct of US 61 to start of IA 136 NHS near Clinton)	Clinton	29.3	82.87	82.26	78.44	7	5	8	8	10	10	8	1
	IA 136 (US 67 to Illinois border)	Clinton	0.5	51.62	52.34	46.15	5	1	1	6	8	5	5	1
IA 137	IA 137 (jct of IA 5 to jct of US 63)	Monroe, Wapello	14.7	63.62	70.48	68.39	6	6	7	3	4	9	10	6
IA 139	IA 139 (jct of IA 9 to Minnesota border)	Winneshiek	11.4	76.35	78.26	76.94	7	5	9	8	8	10	9	1
IA 140	IA 140 (jct of US 20 to jct of IA 3)	Woodbury, Plymouth	25.4	75.59	89.11	84.00	9	7	9	8	9	10	8	7
IA 141	IA 141 (jct of US 59 to jct of US 71)	Carroll, Crawford	21.0	67.07	72.56	72.03	7	4	8	7	7	9	9	7
	IA 141 (jct of US 71 to jct of IA 4)	Guthrie, Carroll	24.8	77.02	82.19	80.23	8	5	8	8	6	9	10	8
	IA 141 (jct of IA 4 to beginning of four-lane near Perry)	Guthrie, Dallas	13.4	83.69	83.44	83.49	10	8	6	5	6	9	9	8
	IA 141 (start of four-lane in Perry to jct of US 169)	Dallas	8.8	74.56	76.92	76.72	7	2	7	8	9	8	10	2
	IA 141 (jct of US 169 to jct of I-35/I-80)	Dallas, Polk	44.8	76.22	75.33	75.36	7	6	5	6	9	6	10	9
IA 143	IA 143 (from jct of IA 10 to jct of IA 3)	O'Brien, Cherokee	12.0	81.94	84.97	82.36	8	6	9	8	6	10	10	6
IA 144	IA 144 (jct of IA 141 to jct of IA 175)	Dallas, Boone, Greene	18.0	76.40	75.59	72.53	5	3	8	6	9	9	10	8
	IA 144 (jct of US 30 to jct of IA 175)	Webster, Greene	16.0	82.16	83.79	77.21	8	5	10	9	8	10	8	9
IA 146	IA 146 (jct of US 63 to jct of I-80)	Mahaska, Poweshiek	18.9	90.27	90.92	87.55	10	8	7	7	8	9	9	1
	IA 146 (jct of I-80 to jct of US 30)	Poweshiek, Marshall, Tama	26.7	71.26	72.73	72.37	6	3	5	5	7	9	10	10
IA 148	IA 148 (jct of US 34 to jct of I-80)	Adams, Cass	37.0	83.40	85.31	83.64	8	7	9	8	9	10	9	1
	IA 148 (Missouri border to jct of US 34)	Taylor, Adams	29.8	80.33	80.93	78.31	7	6	9	9	8	10	9	1
IA 149	IA 149 (jct of US 34 to jct of US 63)	Wapello, Tama, Story	10.9	75.29	76.08	75.39	7	5	6	7	9	6	10	9
	IA 149 (jct of US 63 to jct of IA 92)	Wapello, Keokuk	28.1	73.36	75.42	72.50	7	5	7	6	7	9	9	1
	IA 149 (jct of IA 92 to jct of I-80)	Iowa, Keokuk	28.1	73.62	73.71	72.17	6	2	7	8	9	9	9	9
IA 150	IA 150 (jct of US 218 to jct of I-380)	Benton	13.2	70.30	70.28	66.41	5	3	5	5	9	9	8	1
	IA 150 (jct of I-380 to jct of US 20)	Buchanan, Benton	14.3	59.76	64.69	60.64	7	5	5	3	1	8	9	1
	IA 150 (jct of US 20 to south jct of IA 3)	Buchanan, Fayette	16.6	67.72	67.31	62.87	7	4	2	1	4	7	8	7
	IA 150 (jct of IA 3 to jct of US 18)	Fayette	22.8	73.53	74.14	70.27	7	4	7	6	7	9	8	2
	IA 150 (jct of US 18 to jct of IA24/US 52)	Winneshiek, Fayette	16.2	74.15	76.35	73.45	8	3	7	5	8	9	9	5
IA 160	IA 160 jct of IA 415 to jct of I-35)	Polk	4.1	75.08	72.52	72.05	8	5	2	5	9	4	10	6
IA 163	IA 163 (jct of US 69 to jct of US 63)	Polk	9.9	69.27	67.32	64.65	7	3	3	4	9	4	10	5
	IA 163 (jct of US 65 to jct of IA 14)	Jasper, Polk	48.5	77.07	77.49	76.64	9	6	6	5	5	7	10	8
	IA 163 (jct of IA 14 to jct of US 63)	Marion,Mahaska	63.4	76.01	77.36	77.37	9	6	7	7	5	8	10	7
IA 173	IA 173 (jct of IA 83 to jct of IA 44)	Shelby, Cass, Audubon	14.7	78.66	78.46	77.96	6	4	8	8	9	10	10	4
IA 175	IA 175 (from Nebraska border to jct of US 59)	Monona, Ida, Woodbury	49.8	76.77	78.34	72.36	7	4	8	7	8	9	8	5
	IA 175 (jct of US 59 to jct of US 71)	Ida, Sac	25.3	80.37	80.34	75.64	8	5	8	7	7	9	9	6
	IA 175 (jct of US 71 to jct of US 169)	Calhoun, Webster, Sac	27.0	73.26	76.94	74.14	7	5	8	7	7	9	9	6
	IA 175 (jct of US 169 to jct of I-35)	Webster, Hamilton	30.0	93.00	92.32	91.55	9	7	9	9	9	10	10	7
	IA 175 (jct of I-35 to jct of IA 14)	Grundy, Hardin, Hamilton	31.9	80.71	79.31	76.46	7	5	8	7	7	9	9	7
	IA 175 (jct of IA 14 to jct of US 63)	Grundy, Black Hawk	16.5	72.89	72.66	69.67	6	3	8	7	7	9	9	7
IA 182	IA 182 (jct of US 218 to jct of IA 9)	Lyon	9.1	85.70	87.95	83.62	10	8	7	7	7	9	8	5
IA 183	IA 183 (jct of IA 141 to jct of IA 127)	Monona, Harrison	29.5	79.69	80.43	79.31	7	4	10	9	10	10	9	5
IA 187	IA 187 (jct of US 20 to jct of IA 3)	Fayette, Buchanan	15.6	70.31	70.56	65.80	5	3	8	8	8	9	9	1
	IA 187 (jct of US 20 to jct of IA 150)	Fayette	12.9	87.62	91.89	91.59	9	8	9	8	9	10	9	4
IA 188	IA 188 (jct of IA 3 to jct of US 63)	Butler, Bremer	13.6	91.21	92.16	86.02	9	7	9	9	9	10	8	1
	IA 188 (jct of US 218 to jct of US 63)	Bremer	10.7	75.51	76.66	73.48	6	3	9	9	9	10	9	5
IA 191	IA 191 (jct of I-80 to jct of IA 37)	Pottawattamie, Shelby, Harrison	22.8	72.81	79.63	78.09	7	3	9	9	8	10	10	5
IA 192	IA 192 (jct of I-80 to jct of US 6)	Pottawattamie	4.4	63.41	60.16	59.05	5	1	4	5	9	5	9	7
IA 202	IA 202 (Missouri border to jct of IA 2)	Davis, Appanoose	10.5	90.49	86.93	86.82	8	5	9	9	10	10	10	6
IA 210	IA 210 (jct of IA 141 to jct of I-35)	Story, Boone, Dallas	20.4	78.56	83.09	81.27	8	6	6	7	9	9	9	6
	IA 210 (jct of I-35 to jct of US 65)	Story	14.4	92.51	92.87	91.10	10	8	8	9	10	10	9	6
IA 212	IA 212 (jct of IA 21 to jct of US 6)	Iowa	12.2	88.08	90.12	88.10	9	7	8	8	10	10	9	6
IA 220	IA 220 (jct of US 6 to jct of US 151)	Iowa	7.2	73.94	78.44	76.18	7	5	6	8	9	8	9	8
IA 224	IA 224 (jct of I-80 to jct of IA 14)	Jasper	10.6	69.65	94.14	93.44	10	7	9	9	9	10	10	6
IA 281	IA 281 (from Waterloo city limits to jct of IA 150)	Black Hawk, Buchanan	28.2	84.31	85.48	81.67	9	7	7	7	8	9	9	4
IA 316	IA 316 (jct of IA 5 to Runnels city limits)	Warren, Marion, Polk	5.8	72.55	76.68	71.75	6	2	9	9	10	10	8	5
IA 330	IA 330 (jct of US 65 to jct of US 30)	Marshall, Jasper, Story	41.5	82.24	81.63	80.13	8	6	8	7	8	9	10	1
	IA 330 (jct of US 30 to jct of IA 14)	Marshall	12.8	70.22	72.06	65.21	6	4	7	7	6	9	8	7
IA 346	IA 346 (jct of US 218 to jct of US 63)	Chickasaw	12.4	85.12	85.05	81.91	9	8	8	6	7	9	9	6
IA 376	IA 376 (jct of I-29 to jct of IA 12)	Woodbury	8.5	72.00	68.98	69.03	6	2	5	5	8	6	10	8

Route	Corridor Description	Counties	Corridor Length (Mi)	2015 Comp Rating	2016 Comp Rating	2017 Comp Rating	PCI	IRI	PASS	SU	COMBO	VC	BCI	SAFETY
IA 376	IA 376 (jct of IA 12 to jct of US 75)	Woodbury, Polk, Scott	8.7	70.54	69.70	↓ 69.64	→ 7	↑ 5	↑ 7	→ 6	→ 8	→ 7	→ 9	7
IA 404	IA 404 (jct of IA 3 to jct of IA 60)	Sioux	3.2	70.30	68.10	↑ 70.45	↓ 3	↑ 6	→ 9	→ 9	→ 9	→ 9	↓ 9	2
IA 415	IA 415 (IA 415 NHS near Polk City city limits to jct of IA 141)	Polk	7.6	64.32	66.26	↓ 65.23	↑ 6	↑ 4	↑ 1	→ 1	↑ 10	↓ 4	↓ 9	6
	IA 415 (start of four-lane NHS to jct of IA 160/IA 415)	Polk	5.8	75.79	75.77	↓ 73.66	↑ 9	↑ 4	↓ 5	↓ 6	↑ 10	↓ 5	→ 10	8
	IA 415 (jct I-35/80 to jct of IA 160)	Polk	7.3	72.77	70.63	↓ 70.00	↑ 7	↑ 5	↑ 1	↓ 3	↑ 10	↓ 2	→ 10	4
	IA 415 (jct of US 6 to jct of I-35/80)	Polk	2.3	69.91	67.63	↓ 66.46	↑ 7	↑ 3	↑ 1	→ 1	↑ 8	→ 4	→ 10	8
IA 461	IA 461 (jct of I-280 to jct of US 67)	Scott	8.5	68.04	69.28	↓ 65.37	↑ 7	↑ 5	↑ 3	↑ 4	↑ 3	↑ 8	↓ 9	1
	IA 461 (from jct of US 6 to jct of US 67 in Davenport)	Scott	5.7	65.73	58.63	↓ 57.41	↑ 4	↑ 1	↑ 5	↑ 7	↑ 10	↑ 6	↓ 9	6
	IA 461 (jct of US 6 to jct of I-80)	Scott	5.6	72.83	70.13	↓ 66.97	↑ 7	↑ 5	↑ 3	↑ 5	↑ 9	↑ 5	↓ 8	6
IA 471	IA 471 (IA 175 to US 20)	Linn	11.0	N/A	N/A	↑ 81.91	↑ 8	↑ 6	↑ 9	↑ 9	↑ 8	↑ 10	↑ 9	1
IA 922	IA 922 (jct of US 30 to jct of I-380)	Linn	6.3	65.40	65.92	↓ 65.53	→ 5	→ 1	→ 5	→ 8	→ 10	→ 6	→ 10	8
	IA 922 (jct of I-380 to jct of IA 100)	Linn	5.3	63.39	64.28	↓ 62.92	→ 6	→ 3	→ 1	→ 1	→ 8	↓ 4	→ 10	8
IA 930	IA 930 (jct of US 30 to start of Lincoln way)	Boone	2.7	89.66	84.14	↓ 83.26	↓ 8	→ 6	↑ 5	→ 7	↑ 10	↑ 9	↓ 9	7
IA 946	IA 946 (full route)	Dubuque	2.1	69.70	67.48	↓ 67.12	→ 7	→ 2	→ 5	→ 6	→ 8	→ 7	→ 10	4
IA 965	IA 965 (jct of US 6 in Iowa City)	Johnson	1.1	74.33	76.63	↓ 75.98	→ 9	→ 5	→ 1	→ 4	→ 9	→ 5	→ 10	5

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